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ORIGINAL COMMUNICATIONS.

ART I.—*On the Climatic Conditions of the Summer of* 1853, *most directly affecting its Sanatary Character*, (a Report to the Secretary of the Smithsonian Institution, Washington.) By LORIN BLODGET, ESQ., in Charge of the Meteorological Department.

THE most important condition of our summer climate affecting its sanatary character is the most difficult to measure. Humidity, or the proportion of the amount of moisture required to fully saturate the air, which it is found to contain at any time, is, probably, the controlling sanatary condition at all high temperatures. This is of course exclusive of local or miasmatic causes, which are climatic only in the more limited sense, and secondary to temperature and humidity under all circumstances.

The determination of humidity in such a manner as to make the results comparable at different places, and available for general grouping, is the most recent point gained in meteorological observation. Without concert of action, and uniformity in the manner of observation, and in the instruments used, the earlier observations served only for compari-

sons at the same station, and even that imperfectly. The various forms of hygrometer and dew-point instruments have been generally superseded by the wet-bulb thermometer. The observation of the *temperature of evaporation*, as given by this instrument, under circumstances which truly represent the mass of surface atmosphere at the time, or what may be termed normal conditions in respect to the *evaporating effect*, has entire uniformity of character, and such observations may be relied upon for the fullest comparison and illustration.

The summer of 1853 has been extraordinary in its climatic conditions, and the extremes of temperature and humidity were much more striking and clearly defined than usual. The relation which these conditions may have to the general sanatary character of a month or season, may therefore be analyzed under unusually favorable circumstances, if our observations are sufficient to define them with precision. The purpose of this paper is to present them in the proper grouping and contrasts, and this process will serve as a general test of their accuracy, and apply them to their most important purpose at the same time.

Some of the more disastrous periods of mortality of the summer have been attributed directly to extreme temperature, while the attendant condition of humidity has scarcely been recognized as influencing results. Violent epidemics, and even contagious diseases, may have been initiated by some maximum of these conditions, and the subsequent propagation and continuation may be due to other causes more difficult to decide upon. Without assuming entire dependence upon the conditions of climate we now measure for epidemics of the more violent character, it is still a point gained of unusual importance when numerical values may be given to humidity as well as temperature. With these the statistics of disease and mortality may ultimately undergo thorough comparison and examination, and to that research the greatest and final results will belong.

The climatic research conducted by the Smithsonian Institution now embraces every climatic district of the country.

The full registers, including with the more common observations the difficult one of the temperature of evaporation, from which is deduced the relative humidity, number about thirty, which are immediately returned at the close of an observed month. There are others in the New-York and Military Systems, accessible at a latter period; but the first suffice to determine every important district in this respect. Correct temperature observations for the open air are reported in the same prompt manner from about two hundred stations, of which about fifty measure carefully the amount of precipitation.

From these data the present exhibit is prepared. It will present, first, the several periods of excessive heat in the three summer months of the present year, and the comparison of various districts during those periods.

Second, the periods of excessive humidity, and of unusual amount of precipitation; and the relation of these in time and place to the division of excessive variations of temperature.

It also marks extremes of absence of humidity, and of cold, which are less important as sanitary conditions standing alone, though the low humidity apparently occurs generally as a very important modification of the injurious character of a period of excessive heat.

The first general high temperature of the season occurred on the 3d to the 5th of June, extending from Montreal to Florida, but this did not occur at the West generally. At the South it was a day later than in New-York, and its maximum at the North, from Montreal to New-York, 83°, and from Chapel Hill, N. C., to Savannah, Ga., 92°. The period was so short that no general consequence would probably attach to it, however, and the amount of humidity was not unusual.

From the 14th to the 18th, the heat was excessive and general. At the extreme West, in Minnesota, Iowa and Wisconsin, it occurred on the 12th and 13th; the atmosphere affected passing eastward across the continent as a well-defined body, according to what seems a law of all dynamic or inconstant climatic phenomena. It did not extend beyond Camden, S. C.,

southward, and attained a higher point at the West than elsewhere, of 90° to 94° in Ohio, Kentucky, and westward in the same latitudes. Succeeding this, a general excess of temperature occurred from the 20th to the 23d, less than the preceding in the extreme North, and with a considerable fall there on the 22d, but quite unusual and long-continued at almost every other part of the country. The maxima varied from the 20th to 23d, and ranged from 90° to 97°. With the slight allowance for excess, which usually should be made in the readings at these extreme points, the maximum of 95° was probably general, from New-York to Savannah, on the 23d, and the same degree the day previous in Ohio and Michigan. In Tennessee and southwestward, the same point was reached on the 20th; in Mississippi and Texas still one day earlier.

Lastly, a most extraordinary extreme of heat occurred on the 29th and 30th; in this case, as before, beginning earliest at the West by a day and a half for the distance from St. Louis to Washington. This extreme was central in the latitude of Washington, and was limited at Savannah on the South, and Burlington, Vt., on the North. It attained 96° to 98° in Tennessee, Kentucky, and Southern Ohio, and 99.5° to 102° at Washington and in Eastern Virginia and N. Carolina. This is without any known parallel in the records of temperature here, and is several degrees above any recorded temperatures at New-Orleans, Mobile, or Savannah.

The general temperature of July was also high, and slightly above the normal mean in most parts of the United States. The mean of June was much above the normal one, attaining a maximum of excess in Wisconsin and Illinois of nine degrees. It was there 4.5° above the mean for July,—this excess being less at the East, where the two months were nearly equal, and June 5° above the normal mean.

The excessive heat of the last days of June was prolonged through the 1st and 2d of July at 94° in Virginia and at the South, and the range was generally high at Philadelphia and South until the 10th, when it was again at 92 to 84°. North of latitude 40° there were no great heats in this month, and the temperature was quite uniform throughout. The tempe-

rature was at or above 90°, after the middle of the month, only in Central Georgia and Alabama, and westward in this latitude to Texas, for two or three days about the 20th, and again at the close of the month.

In August, a period of general excessive heat occurred, beginning, as usual, earlier at the West, and reaching 90° at Lac-qui-parle, on the St. Peter's River, Minnesota, (lat. 45°, long. 96°,) on the 7th and 8th. The maximum in Illinois and the adjacent States was 90° to 94° from the 8th to the 13th, in Ohio and Kentucky nearly the same; and, passing eastward a little later through Pennsylvania, the district of greatest excess was central at New-York from the 12th to the 14th.

The temperature was below 80° at Cedar Keys, Talahassee, and Pensacola, Fla., through these days, and at no place South reached 90°. Later in the month, from the 25th to the 31st, the heat was unusually great in the Southwest,—Texas, the Cherokee Territory, and Mississippi,—with an extraordinary reverse in Iowa and the adjoining States. Frosts occurred in all the States West and North of Ohio at some day from the 25th to 28th inclusive; and in some parts of Iowa, Wisconsin, and Michigan, there were two or three in succession, and great injury was done to vegetation. At Lac-qui-parle, Minnesota, 3° farther north, and nearly a thousand feet higher, there was one very slight frost on the 27th.

These extraordinary conditions of temperature become more important when connected with the accompanying conditions of humidity. As general comparisons of this last condition have hardly been possible heretofore, the present summer cannot be compared with previous years, except in one or two extremes of its sanatary effect.

The observations of humidity are, however, believed to be of the very best character. The temperature of the *natural evaporation* has been taken under uniform directions, and with uniform instruments. The actual *evaporating effect* of the air at the time, as the measure of its true evaporating power in a climatic sense, and such as could affect animal life and the growth of vegetation, has been sought in the directions given, and in the practice of the observers.

From such observations the fraction of saturation, or the percentage of humidity existing in the air at the time, has been deduced by Regnault's formulas, first determined theoretically from the latent and specific heat of air and aqueous vapor, and subsequently modified in the numerical elements to conform to the results derived from actual experiment.

These results are arranged in a tabular form for greater convenience of comparison. The "relative humidity" is the percentage of moisture which the air at the time contains. 100 being full saturation. The absorbent power of the air in highly heated periods is directly as this decrease of the degree of saturation, and is the most precise measure possible of the sanatary condition which is peculiarly climatic, and not dependent on miasmatic or other secondary causes.

A brief reference to the prominent points in this comparison may assist the examination. It may be stated that the fractions of saturation are much more variable in cold than in warm climates at all temperatures. The mean summer saturation at New-Orleans, by the valuable observations of Dr. Barton,* is .857, and the mean saturation for the year .811. The degree here is quite constant through successive years for the different seasons, and has its maximum in summer. The maximum in the northern portion of the United States is also in summer, but the mean is something more than one-tenth of saturation less than that at New-Orleans.

The fractions given in the tabular statements used for the present general comparisons are from one observation only for the day, that at 2 P. M.; which is very near the hour for maximum temperature also. It would be equally important to give the mean of the day, but as the labor would be very much increased, the single hour of extreme range of the several conditions, giving the most striking contrasts, has been thought sufficient for the present purpose.

The heats of June are seen at once to have been remarka-

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* *Report to the La. State Med. Soc., on the Meteorology, Vital Statistics, and Hygiene of Louisiana.* By DR. E. H. BARTON, 1851. The amounts here given are a summary from observations at sunrise, midday and 9 P. M., for eight years.

bly dry. The fraction of saturation was at a mean of about 50 in the Northeast, and but 40 to 45 in the interior and in Texas, during the hot days from the 14th to the 17th, though much higher at Pensacola and the extreme South, where the heat was not so great. At the 20th to the 23d, the rate was about the same in the districts of excessive heat. On the 29th and 30th, the percentage was but 35 to 40 in the narrow district through Tennessee, Kentucky, and Virginia, which marked 100° as the maximum temperature. The coincidence of unusual absence of humidity with this unequaled temperature was fortunate. The usual saturation with this degree of heat would have been extremely destructive to health and life.

The first two days of July were a continuation of the conditions of the last of June. The remainder of the month was not unusual in its hygrometric character generally, though at New-Orleans, where, unfortunately, we have no observations after May, the evidences of high saturation are given in the profuse and constant rains of the middle of the day, preceded by a hot and oppressive morning. This weather was reported as quite uniform for the first and most fearfully fatal month of the yellow fever. The approach to a tropical character in the midsummer saturation and daily rains, at New-Orleans, is more or less distinctly marked in different years at all times, but the present summer seems to have attained a maximum in this respect, and to have given in this way terrible effect to the epidemic, when once induced, in whatever manner that may have been. It is hoped that careful observations of the humidity of the yellow-fever period of the present summer there, have been made. The Gulf Coast in Texas and Florida does not properly represent the humidity or other climatic peculiarities of New-Orleans, nor does any place in the interior from which we have observations.

The great heat of August was most remarkable in its hygrometric condition also, and universally attended with a high fraction of saturation. At Washington it was 55 to 60, and at New-York near 70 per cent at 2 P. M., and almost at

saturation morning and evening. Though the temperature of the air was but 90° to 94°, or 6° less than that of the last of June in Washington and Richmond, where no fatal effects were felt, the mortality from the effect of great heat with great saturation was frightful. By reference to the tabular statements it may be seen that the absolute degree of heat could not have caused the fatality alone, or without the attendant humidity. Some term more specific or more comprehensive than *sun-stroke* seems therefore required to designate the fatal congestion, or whatever may be the immediate cause of death, in these cases.

Another and perhaps clearer point for comparison is the *temperature of evaporation*, or that of the wet-bulb thermometer alone. The dew-point has usually been obtained for such comparisons, but it is far less easy to obtain without error; and, as it is itself no absolute determination, but an intermediate point only, it is quite generally discontinued.

The temperature of evaporation at New-York, at the time of greatest mortality in August, was from 80° to 84°, being higher than the maximum temperature of evaporation at New-Orleans at any time in 1852 by two degrees. At the latter place it reached 82° but once in that year. At Austin, Texas, for the last August, the same maximum was 78°; at Savannah, Ga., 79°; at Camden, S. C., Culloden, Ga., and Washington, 77°. Jacksonville, Fla., and Eutaw, in Central Alabama, were the only places at the South giving a temperature of evaporation of 84°, or as high as that at New-York on the 13th and 14th of August.

With such conditions of temperature and saturation, in a nominally elastic and cool climate, it is not wonderful that the mortality from its immediate effect should have been very great. It is more remarkable that some incipient epidemic was not started in full vigor to rage after the principal inducing cause had passed away. With the exceptions of New-Orleans, and New-York at this limited period, the heats of the summer, though extreme, have been attended with a low humidity, and have been unusually favorable in this respect. The maximum heat of June, which was from 4° to 9° above

the mean, could scarcely have passed without most injurious effects at the ordinary percentage of humidity. The excessive heats of lower Texas, the Rio Grande Valley, and other districts, where the thermometer rises to 112 and 115°, have a temperature of evaporation not above that at New-Orleans, with the air at 87°. At Austin, Texas, with the air at 98° several times in June, the temperature of evaporation never rose above 78°, and at the highest air temperatures was at 74° and 76°,—or nearly 10° below the temperature of evaporation at New-York, when the air thermometer did not exceed 95°.

The heats of those districts are therefore endurable and even pleasant, at a degree which would seem fatal to life, from the great evaporating power and elasticity of the atmosphere which uniformly prevails.

As an attendant condition resulting from humidity, the amount of rain for the three summer months should be given in this connection.

The normal distribution of rain among all the months is very nearly equal in the northeastern parts of the United States. The amount varies through a wide range, however, in different years. Each of the summer months may change from an entire absence of rain to an ordinary maximum of twelve inches; and, in one or two instances, an extreme of twenty to twenty-two inches. It is difficult, therefore, to say as definitely what the relation of either month has been to the normal condition from this observation, as from either temperature or the hygrometric observation.

In June, the amount of rain was much less than usual, generally. In Maine and most of New-England, the amount was least, varying from half an inch to an inch and a half in depth. The amount for all central parts of the United States was within these limits, except the eastern portion of Virginia. In Florida, there was about the usual amount (of 3 to 3½ inches). In a small district central in Iowa it reached 6½ inches.

In July, the amount was particularly large at Philadelphia and southward to Florida, where it was 11.5 inches. In

Alabama and at New-Orleans, the amount was nearly as great, and in Iowa and Wisconsin it was again large,—from 6 to 8 inches. In other parts of the United States and Canada, the usual amount of from 2.5 to 4 inches fell. There were, however, large districts in which the least of these amounts, in conjunction with the very little rain in June, caused very severe droughts. The principal of these was in Eastern Ohio, and Western Pennsylvania, and New-York. In Central New-York the amount was variable and the drought in some places severe.

In August, the rains were excessive in a district extending from the lower part of New-Hampshire to Northern New-Jersey; at Bloomfield, N. J., and New-York, the amount falling was near 12 inches. From Baltimore to Savannah, also, the amount was large, being from 5 to 6.5 inches, and about 1½ inches more than usual. The last days of July and the first days of August gave an excessive precipitation in Eastern Pennsylvania and New-York, New-Jersey, &c. These flooding rains, which gave in some instances 4 to 8* inches in depth of water in a single storm of a few hours, attended very warm weather, and immediately preceded the fatal heats of 12th to 14th August.

They were also followed by profuse rains, and the whole period from 25th July to 15th of August seemed a substitution of a tropical climate for the usually elastic one, in the district referred to.

The tabular statistics given with this paper are intended to embrace the more marked extremes at the best observed stations of temperature of the air and of evaporation, with the humidity as determined from these. For June, thirty-two stations are given with these observations. For July, the general reference to extremes, and the table of mean temperatures and amount of rain, appear sufficient. The conditions were general, and the extremes not signally marked in most parts of the United States. At New-Orleans there were evidently unusual features, but the districts adjacent to it do not sufficiently represent them to warrant any tabular arrangement

* Register of R. L. COOKE, Principal of Bloomfield Academy, New-Jersey.

of extracts. It is to be regretted that we have not observations there, though they may have been made for part of the month, and may ultimately be compared with other districts.

For August, extracts are given from the registers at twenty-four stations, sufficient to represent every important district.

Mean temperatures and amount of rain are given in a tabular form from over ninety stations.

The temperatures were observed at 7 A. M., 2 P. M., and 9 P. M., in nearly every case; the exceptions are two or three instances, in which the hours were 6 A. M., 2 P. M., and 10 P. M., and as many at sunrise, 9, 3, 9; but in these instances the mean does not differ essentially from the first. Some slight discrepancies appear in this statement, though the general correspondence of stations which should agree is quite apparent. In reference to these means the comparison of June and July with each other and with the normal mean has already been made. The mutual comparison of the three months shows an extraordinary uniformity in absolute position. This seems, at first, to give July a considerable fall below the normal mean, but the truth is rather that it is itself slightly above, and June and August very much above the mean of other years. The normal curve at New-York and northward is a rise of 4° to 4.5° from the mean for June to that for July, and a fall of 3° to that of August. At Philadelphia and southward it is somewhat less, decreasing to the Gulf Coast, where the curvature nearly disappears. Fifty-seven consecutive years of observation near Philadelphia give 4.3° as the first value, or the change from June to July, and 2.9° as the second, or fall to the mean of August. With this general guide the comparison of the various stations in this respect may readily be made by the reader.

The amount of rain may be compared with normal amounts in this general way also, in addition to the references already made to the extremes. In the New-England States the observed mean precipitation for the last twenty years is greatest in August, and least in July, of the three summer months.—Three and one-fourth, two and one-fourth, and three and three-fourths inches, consecutively represent the summer fall of rain there for the three months.

In New-York this difference disappears. There and southward to Baltimore the mean of long series of observations gives about 3.5 inches as the mean for each summer month.

At the South the amount is greater, with a tendency to excess in August in the Atlantic States, but elsewhere the summer months are nearly uniform in quantity, and the amount greater than in other parts of the year. Six to seven inches of rain in the interior at the South, or away from the mountains or the immediate coast, is nearly the general mean for each summer month.

At Cincinnati the months again become nearly equal in amount of rain, through the year, and the summer quantity, monthly, 4.4 inches. In Iowa it is more, though very irregular; and elsewhere at the Northwest falls off rapidly, preserving a relation for each month of about one-tenth to the annual amount. This hasty reference to mean quantities cannot be made very clear here, with the space assigned and the present purpose, but the few points given may assist in judging of profusion or failure of rain for the summer in the general way required for sanitary comparison.

In conclusion, it may be said that a more precise definition of periods of time, and a closer limitation of districts, in respect to each branch of the subject, is very desirable, and is possible, also, from the data already at hand, with greater space, and time for a more full elaboration and comparison. Limited districts, of extreme drought in these months, and others of the spring, have occurred. Some of these, in time and place, would be quite important to define in the special purpose we now have, and still more in their connection with the agricultural prosperity of the country for the year.

That our climate has general characteristics, in both the conditions treated here, which permit a clear grouping and statement almost at the time the events are passing, is considered fully sustained by these references and statistics. This is itself of great interest, as showing that we have the means at hand to make the research almost coincident in time with the phenomena. The great advantage of this in all that pertains to the sanitary condition will be recognized at once.

JUNE, 1853.

BURLINGTON, VT.—Rev. Z. Thompson.

	Air.	*Evap'n.*	*Humidity.*
14th	91.	76.	.47
15th	92.	75.	.39
16th	82.	74.	.67
17th	85.	74.	.58
20th	91.	78.	.53
21st	82.	65.	.35
22d	79.	67.	.50
23d	92.	76.	.46
30th	89.	75.	.50

PITTSFIELD, MASS.—J. H. Benjamin.

14th	83.3	69.8	.49
15th	85.	71.6	.50
16th	85.	75.	.62
17th	75.	70.	.78
29th	74.3	68.9	.74
30th	80.9	73.	.67

WORCESTER, MASS.—Dr. E. A. Smith.

14th	82.4	66.2	.39
15th	86.	66.2	.30
16th	87.	69.8	.39
17th	80.6	68.	.49
20th	86.9	71.6	.45
21st	90.	71.6	.37
29th	73.4	68.	.74
30th	84.5	71.6	.51

S. MARTIN'S, MONT'L.—Dr. C. Smallwood.

14th	91.3	78.6	.53
15th	94.3	79.6	.50
16th	97.	79.9	.56
17th	83.	72.8	.61
20th	86.7	77.	.65
21st	72.	61.	.50
22d	61.	54.8	.66
23d	90.6	80.	.62
30th	82.	70.	.55

AMHERST, MASS.—Prof. E. S. Snell.

14th	86.	70.7	.63
15th	88.	77.	.58
16th	89.5	77.7	.58
17th	79.	74.	.77
20th	89.	76.3	.52
21st	91.3	76.8	.49
22d	85.	79.	.79
23d	81.5	75.9	.74
29th	73.6	70.7	.86
30th	86.5	78.4	.68

NEWBURYPORT, MASS.—Dr. H. C. Perkins.

14th	72.5	68.7	.71
15th	83.3	63.5	.55
16th	95.	68.9	.49
17th	85.	68.9	.57
20th	87.6	76.1	.56
21st	80.7	69.4	.54
29th	69.6	63.5	.59
30th	78.8	63.5	.71

POMFRET, CT.—Daniel Hunt.

13th	70.	65.	.75
14th	82.	74.	.67
15th	78.	74.	.82

POMFRET, CT. (Continued)

	Air.	*Evap'n.*	*Humidity.*
16th	82.	76.	.75
17th	77.	73.	.82
20th	86.	77.	.65
21st	89.	80.	.66
22d	86.	81.	.79
29th	72.	69.	.86
30th	84.	78.	.75

MADRID, N. Y.—E. A. Dayton.

13th	—	—	—
14th	87.4	73.4	.55
15th	91.4	73.	.47
16th	91.2	76.6	.55
17th	79.5	68.	.58
20th	84.3	—	—
21st	72.3	59.	.49
22d	74.8	65.1	.62
29th	79.7	73.4	.45
30th	83.1	65.5	.45

BLOOMFIELD, N. J.—R. L. Cooke.

13th	82.5	71.	.54
14th	86.5	74.	.54
15th	84.	72.	.54
16th	84.	75.	.63
17th	57.5	77.	.60
20th	96.	82.	.53
21st	99.5	83.	.48
22d	95.	81.	.51
29th	76.	71.5	.80
30th	89.	84.	.80

PHILADELPHIA.—Prof J. A. Kirkpatrick.

13th	70.	68.	.55
14th	87.	76.	.59
15th	87.	74.	.52
16th	87.	73.	.49
17th	85.	75.	—
20th	96.	79.	.45
21st	95.	80.	.50
22d	95.	79.	.46
29th	85.	76.	.64
30th	95.	80.	.50

LIMA, PA.—Joseph Edwards.

13th	75.7	67.4	.63
14th	84.5	75.2	.63
15th	84.7	71.8	.51
16th	81.8	70.8	.56
17th	71.2	69.	.89
20th	87.8	73.7	.49
21st	90.8	77.9	.53
22d	90.3	78.	.56
29th	82.4	77.	.77
30th	90.7	77.9	.54

NORRISTOWN, PA.—Rev. J. G. Ralston.

13th	81.	70.	.56
14th	89.	78.	.59
15th	87.	72.	.45
16th	87.	72.	.45
17th	72.	72.	1.00
20th	90.	76.	.50
21st	93.	81.	.58
22d	93.	77.	.46
29th	87.	78.	.65
30th	90.	77.	.56

HOLLIDAYSBURG, PA.—I. R. LOURIE.

	Air.	*Evap'n.*	*Humidity.*
13th	85.8	66.9	.32
14th	89.9	71.2	.36
15th	86.3	72.7	.50
16th	88.7	71.2	.39
17th	79.3	68.	.53
20th	92.4	72.3	.34
21st	86.3	76.1	.61
22d	86.7	75.9	.59
29th	34.7	75.7	.39
30th	34.6	74.8	.38

BALTIMORE, MD.—DR. G. H. STEINER.

13th	82.	70.1	.53
14th	87.4	75.2	.54
15th	86.9	73.	.49
16th	87.	70.1	.40
17th	77.5	70.1	.68
20th	95.5	75.3	.36
21st	95.7	75.5	.36
22d	96.2	78.8	.44
29th	88.1	78.9	.35
30th	92.3	73.5	.38

ALEXANDRIA, VA.—BENJ. HALLOWELL.

13th	78.8	69.8	.62
14th	90.5	76.1	.49
15th	86.	75.2	.59
16th	86.9	73.4	.51
17th	71.6	69.8	.91
20th	90.5	77.	.52
21st	90.5	77.	.52
22d	89.6	78.8	.60
29th	91.4	74.3	.42
30th	95.	75.2	37

SAVANNAH, GA.—DR. JOHN F. POSEY.

13th	84.	73.9	.60
14th	86.	68.7	.40
15th	85.8	72.6	.51
16th	83.8	74.1	.61
17th	84.	73.5	.59
20th	81.3	76.1	.77
21st	87.8	78.6	.64
22d	92.3	77.9	.50
29th	90.8	75.2	.46
30th	91.2	78.4	.54

CAMDEN, S. C.—THORNTON CARPENTER.

13th	85.9	70.	.35
14th	92.	72.2	.35
15th	93.	73.7	.37
16th	91.	73.	.39
17th	89.	75.	.50
20th	78.5	73.8	.79
21st	89.5	78.	.58
22d	93.	75.	.40
29th	97.5	73.6	.27
30th	97.6	74.	.29

SPARTA, GA.—DR. E. M. PENDLETON.

13th	93.	73.	.35
14th	94.	70.	.26
15th	96.	70.	—
16th	95.	71.	.26
17th	95.	73.	.31
20th	90.	78.	.56
21st	92.	72.	.54
22d	—	—	—
29th	96.	70.	—
30th	97.	72.	26.

CULLODEN, GA.—JOHN DARBY.

	Air.	*Evap'n.*	*Humidity.*
13th	85.1	68.7	.40
14th	85.6	67.1	.33
15th	88.7	69.8	.35
16th	86.7	67.1	.30
17th	88.5	70.8	.38
20th	79.5	72.3	.69
21st	88.5	75.2	.50
22d	87.8	75.9	.55
29th	93.2	73.	.34
30th	92.5	72.3	.34

EUTAW, ALA.—A. WINCHELL.

13th	95.	78.	.44
14th	92.	75.	.42
15th	96.	78.	.42
16th	96.	79.	.45
17th	98.	79.	.40
20th	99.	82.	.47
21st	93.	82.	.61
22d	98.	83.	.51
29th	104.	82.	.36
30th	101.	86.	.52

JACKSONVILLE, FLA.—DR. A. S. BALDWIN.

13th	82.	76.	.74
14th	81.	74.	.71
15th	81.	75.	.74
16th	80.	75.	.78
17th	83.	77.	.75
20th	85.	80.	.82
21st	88.	83.	.80
22d	84.	—	—
29th	87.	79.	.69
30th	84.	79.	.79

PENSACOLA, FLA.—COM. TATNALL.

13th	81.	78.	.87
14th	81.	77.	.83
15th	82.	76.	.74
16th	82.	79.	.87
17th	82.	78.	.83
20th	83.	78.	.79
21st	77.	76.	.95
22d	84.	78.	.75
29th	86.	83.	.88
30th	85.	79.	.76

AUSTIN, TEXAS.—DR. SAM'L K. JENNINGS.

10th	96.	72.	.27
11th	98.	74.	.28
12th	83.	73.	.60
13th	84.	72.	.54
14th	90.	76.	.50
15th	86	68.	.36
16th	70.	66.	.80
17th	90.	76.	.50
18th	94.	74.	.36
19th	97.	74.	.30
20th	92.	74.	.39
21st	89.	78.	.59
22d	93.	78.	.49
26th	93.	76.	.43
27th	90.	76.	.50
28th	92.	76.	.45
29th	96.	76.	.37
30th	96.	77.	.39

KNOXVILLE, TENN.—O. W. Morris.

	Air.	*Evap'n.*	*Humidity*
5th	89 9	73 2	.41
6th	88.1	71.2	.40
12th	96.	69.	.38
13th	86 2	66.	.30
14th	88.8	68.9	.32
15th	90.1	70.5	.34
16th	87.	70.1	.40
28th	91.	72.3	.37
29th	93.	71.9	.26
30th	94.4	74.3	.35

LEBANON, TENN.—Prof. A. P. Stewart.

5th	87.8	70.5	.39
6th	86.9	70.7	.41
12th	89.7	—	—
13th	89.9	—	—
14th	91.	—	—
15th	91.4	—	—
16th	89.9	—	—
28th	92.6	71.6	.32
29th	93.2	75.2	.40
30th	95.9	73.6	.31

CLARKSVILLE, TENN.—W. M. Stewart.

4th	86 7	76.4	.59
5th	88 1	71.2	.41
6th	88.7	72.5	.42
11th	84.9	73.4	.56
12th	87.4	68.	.33
13th	87.4	69.8	.38
14th	87 4	70.1	.39
19th	87.2	68.	.33
20th	90 1	74.1	.44
27th	90.1	72 5	.39
28th	91.	70.5	.32
29th	92.5	74.8	.41
30th	92.8	74.5	.40

OBERLIN, O.—Prof. I. H. Fairchild.

13th	90.	77.	.53
14th	89.	78.	.59
15th	93.	83.	.64
16th	91.	86.	.60
17th	97.	68.	.61
18th	82.	72.	.59
19th	90.	82.	.70
20th	92.	81.	.61
21st	95.	82.	.55

HILLSBOROUGH, O.—J. Mc. D. Matthews.

13th	85.5	73.	.53
14th	88.5	70.	.36
15th	80.5	78.	.89
16th	87.5	73.	.47
17th	79.5	67.	.49
18th	81.	64.	.35
19th	87.	71.	.43
20th	89.5	72.	.39
21st	90.	74.	.44
28th	87.5	72.	.44
29th	91.5	76.	.46
30th	93.	74.	.37

BROOKLYN, MICH.—Dr. M. K. Taylor.

13th	88.	73.	.46
14th	90.	74.	.44
15th	94.	82.	.58
16th	72.	70.	.90

BROOKLYN, MICH. (Continued.)

	Air.	*Evap'n.*	*Humidity.*
17th	—	—	—
18th	81.	71.	.49
19th	88.	80.	.69
20th	90.	81.	.66
21st	97.	83.	.53
22d	92.	82.	70
28th	90.	82.	.70
29th	79.	73.	.74
30th	81.	72.	.63

N. HARMONY, IND.—John Chapelsmith.

10th	90.	—	.37
11th	91.	—	.37
12th	90.	—	.41
13th	92.	—	.39
14th	93.	—	.37
15th	92 5	—	.44
16th	89.	—	.54
17th	86.	—	.34
18th	86.	—	.52
19th	92.	—	.39
20th	95.	—	.60
21st	91.	—	.60
22d	94.	—	.52
23d	76.	—	.56
24th	78.	—	.44
25th	81.	—	.38
26th	89 5	—	.34
27th	93.	—	.46
28th	97.5	—	.38
29th	95.	—	.50
30th	92.	—	.46

ALTON, ILL.—Dr. John James.

10th	82.	80.	.92
11th	83.	76.	.71
12th	85.	80.	.79
13th	83.	76.	.71
14th	85.	77.	.68
15th	78.	78.	1 00
16th	80.	74.	.73
17th	79.	73.	.74
18th	81.	75.	.75
19th	86.	84.	.92
20th	86.	80.	.77
21st	86.	80.	.77
28th	92.	82.	.64
29th	82.	76.	.74
30th	85.	78.	.72

POULTNEY, IOWA.—Benj. F. Odell.

10th	92.	78.	.51
11th	87.	75.	.55
12th	92.	77.	.48
13th	96.	81.	.50
14th	93.	78.	.44
15th	88.	74.	.49
16th	80.	69.	.55
17th	79.	70.	.62
18th	90.	78.	.56
19th	94.	81.	.55
20th	97.	81.	.48
21st	96.	80.	.47
29th	81.	72.	.63
30th	84.	71.	.50

BELLE FONTAINE, WIS.—Thomas Gay.

12th	91.	76.	.48
13th	90.	77.	.53
14th	91.	82.	.67

BELLE FONTAINE, WIS. (Continued.)

	Air.	*Evap'n.*	*Humidity.*
15th	88.	76.	.55
16th	74.	70.	.81
17th	79.	69.	.58
18th	89.	79.	.62
19th	85.	76.	.64

BELLE FONTAINE, WIS. (Continued.)

	Air.	*Evap'n.*	*Humidity.*
20th	87.	71.	.73
21st	92.	78.	.51
29th	79.	69.	.58
30th	80.	68.	.52

AUGUST, 1853.

S. MARTINS, MONT'L.—DR. C. SMALLWOOD.

10th	92.4	74.4	.46
11th	95.4	77.1	.44
12th	80.1	76.5	.82
13th	86.3	76.3	.61
14th	81.	72.1	.64
15th	88.6	74.	.42
16th	89.	76.	.53

BURLINGTON, VT.—REV. Z. THOMPSON.

10th	86.	74.	.55
11th	92.	77.	.48
12th	91.	79.	.57
13th	91.	80.	.60
14th	74.	69.	.76
15th	85.	72.	.51

AMHERST, MASS.—PROF. E. S. SNELL.

10th	85.2	74.1	.57
11th	88.7	80.6	.69
12th	91.9	75.9	.45
13th			
14th	91.5	82.	.65
15th	76.6	69.8	.69

PITTSFIELD, MASS.—T. H. BENJAMIN.

10th	82.4	73.4	.63
11th	84.2	71.6	.52
12th	86.9	79.5	.78
13th	86.	75.5	.60
14th	87.	84.2	.88
15th	79.	68.7	.55

WORCESTER, MASS.—DR. E. A. SMITH.

10th	84.5	73.4	.57
11th	88.5	73.7	.47
12th	90.6	75.2	.46
13th	91.4	76.2	.47
14th	89.6	75.2	.49
15th	71.6	63.1	.61

NEWBURYPORT, MASS.—DR. H. C. PERKINS.

10th	75.2	70.3	.77
11th	90.3	75.2	.47
12th	92.8	77.7	.47
13th	70.5	67.4	.83
14th	90.8	79.7	.59
15th	68.	62.4	.70

POMFRET, CT.—DANIEL HUNT.

10th	81.	75.	.74
11th	85.	77.	.68
12th	88.	77.	.58
13th	89.	82.	.73
14th	84.	80.	.83
15th	71.	67.	.80

BLOOMFIELD, N. J.—R. L. COOKE.

9th	90.	78.	.56
10th	86.5	72.5	.49
11th	86.	81.	.79
12th	95.	81.	.52
13th	98.	83.	.51
14th	91.	82.5	.69

NORRISTOWN, PA.—REV. I. GRIER RALSTON.

10th	84.	76.	.68
11th	89.	77.	.56
12th	90.5	77.	.52
13th	89.	81.	.70
14th			
15th	82.5	76.	.73

PHILADELPHIA, PA—PR. I. A. KIRKPATRICK

10th	91.	77	.51
11th	93.	80.	.55
12th	93.5	81.	.58
13th	92.	81.	.61
14th	92.5	81.	.61
15th	86.	78.	.68

LIMA, PA.—JOSEPH EDWARDS.

10th	86.3	77.	.61
11th	88.1	77.9	.60
12th	88.7	80.9	.67
13th	87.	80.6	.74
14th	87.2	80.6	.73
15th	82.4	77.	.77

HOLLIDAYSBURG, PA.—I. R. LOWRIE.

10th	86.1	72.6	.50
11th	87.2	72.8	.48
12th	89.6	73.9	.45
13th	90.3	75.3	.47
14th	88.7	77.1	.57
15th	87.8	75.3	.54

BALTIMORE, MD.—DR. S. H. STEINER.

10th	92.6	72.5	.34
11th	92.6	79.7	.54
12th	93.9	77.	.44
13th	94.1	78.8	.49
14th	94.1	79.7	.51
15th	89.6	77.9	.57

SMITHSONIAN INSTITUTION.

9th	88.5	—	—
10th	90.5	—	—
11th	91.5	—	—
12th	92.	—	—
13th	92.	—	—
14th	94.	—	—
15th	91.	—	—

ALEXANDRIA, VA.—Benj. Hallowell.

	Air.	*Evap'n.*	*Humidity.*
10th	85.1	75.2	.62
11th	87.8	75.2	.53
12th	87.8	77.	.59
13th	88.7	77.9	.59
14th	89.6	77.9	.57
15th	92.3	77.9	.50

CAMDEN, S. C.—Thornton Carpenter.

9th	89.6	75.9	.51
10th	90.6	73.	.40
11th	87.5	71.	.40
12th	89.3	72.8	.41
13th	90.2	72.	.37
14th	—	—	—
15th	93.2	77.1	.45

SAVANNAH, GA.—John F. Posey.

9th	84.7	79.3	.78
10th	89.6	79.7	.62
11th	82.7	77.	.76
12th	85.2	76.8	.65
13th	82.4	77.9	.80
14th	78.9	76.8	.90
15th	77.	74.8	.88
16th	83.1	78.8	.82

JACKSONVILLE, FLA.—Dr. A. S. Baldwin.

10th	87.	80.	.72
11th	86.	79.	.72
12th	87.	80.	.72
13th	87.5	80.	.705
14th	89.	83.	.76
15th	87.	79.	.69

CULLODEN, GA.—John Darby.

10th	86.	75.2	.59
11th	85.1	72.5	.52
12th	85.2	76.1	.63
13th	84.2	71.6	.52
14th	85.2	73.7	.56
15th	82.4	77.	.77

EUTAW, ALA.—A. Winchell.

10th	91.	82.	.67
11th	93.	84.	.67
12th	91.	80.	.60

UTAW, ALA. (Continued.)

	Air.	*Evap'n.*	*Humidity.*
13th	88.	79.	.65
14th	89.	78.	.59
15th	91.	83.	.70

AUSTIN, TEXAS.—Dr. Sam'l K. Jennings.

6th	96.	78.	.42
7th	96.	77.	.40
8th	94.	75.	.38
9th	88.	76.	.55
10th	86.	76.	.61
11th	85.	76.	.64
12th	76.	76.	1.
13th	88.	76.	.55
14th	88.	74.	.49
15th	82.	76.	.74
16th	95.	76.	.38
17th	99.	76.	.31
18th	98.	78.	.38
25th	90.	76.	.50
26th	92.	78.	.51
27th	92.	78.	.51
28th	90.	76.	.50
29th	88.	74.	.49

HILLSBOROUGH, O.—J. McD. Matthews.

10th	88.	71.	.40
11th	90.	71.	.35
12th	89.5	77.	.54
13th	85.	77.	.68
14th	78.	74.	.82
15th	81.	74.	.70
16th	86.	74.	.55

OBERLIN, O.—Prof. J. H. Fairchild.

10th	74.	70.	.81
11th	76.	65.	.52
12th	70.	60.	.52
13th	77.	64.	.46
14th	81.	68.	.48
15th	86.	77.	.65

POULTNEY, IOWA.—Benj. T. Odell.

9th	95.	82.	.53
10th	97.	84.	.56
11th	94.	80.	.52
12th	92.	80.	.58
13th	83	75.	.68
14th	86.	—	—
15th	84.	76.	.68

MEAN TEMPERATURE AND PRECIPITATION MONTHLY FOR THE SUMMER OF 1853, AT VARIOUS STATIONS IN THE UNITED STATES AND CANADA.

STATIONS.		MEAN TEMPERATURE.			AMOUNT OF RAIN.		
		June.	July	Aug	June.	July.	Aug.
N. S.	Albion Mines	61.6	69.1	65.0	3.105	2.948	4.120
Me.	Bucksport	66.0	72.0	....	0.050	3.400	.....
"	Biddeford	69.4	73.6	70.2	0.648	1.892	3.336
"	Fryeburg	....	....	....	0.830	1.580	3.125
N. H.	Londonderry	67.0	70.0	68.4	1.250	2.980	6.800
"	Manchester	69.5	72.5	69.2	1.061	1.986	9.154
"	Concord	69.3	71.5	68.6	1.375	4.080	4.875
Vt.	St. Johnsbury	65.0	65.9	....	1.810	3.140	.....
"	Burlington	69.2	70.5	69.8	1.740	3.120	3.460
C. E.	Montreal	68.7	68.0	69.1	3.131	3.102	7.089
Mass.	Amherst	67.0	68.4	69.3	2.636	3.585	6.126
"	Worcester	68.6	71.7	68.7	1.010	3.290	10.710
"	Richmond	....	....	....	2.375	4.000	10.225
"	Newburyport	67.0	71.5	67.2	0.656	1.754	6.959
"	N. Attleboro	67.4	....	....	1.840	2.022	4.250
"	Barnstable	66.7	71.0	71.0	2.075	3.510	2.460
Con.	Pomfret	66.1	68.6	68.7	1.440	3.850	6.850
"	Salisbury	....	....	65.1	.....	.....	3.666
"	New London	66.7	70.4	72.1	.....	.....	.....
N. Y.	Fort Hamilton	69.0	73.5	74.2	4.420	5.830	5.500
"	Fort Columbus	71.2	72.7	73.5	4.800	4.400	5.230
"	West Point	69.1	70.8	71.4	3.770	10.480	7.800
N. J.	Bloomfield	69.9	71.3	71.8	2.750	3.652	12.117
N. Y.	Madrid	....	68.5	....	0.990	1.790	.....
"	Houseville	....	....	70.4	.....	2.470	2.130
"	Constableville	....	69.2	....	2.875	3.625	.....
"	Gouverneur	69.8	70.7	....	1.650	0.800	.....
"	Lodi	69.5	69.5	70.0	2.250	0.750	4.750
"	Buffalo	68.2	....	70.1	1,000	.....	2.150
Pa.	Moss Grove	71.5	68.8	68.5	2.500	0.700	3.100
"	Pittsburg	74.0	72.0	71.0	1.853	3.428	7.747
"	Bedford	72.5	73.3	72.6	0.328	1.513	2.364
"	Hollidaysburg	72.5	73.4	69.7	1.043	1.188	5.041
"	Gettysburg	74.9	74.7	73.0	0.266	5.672	3.382
"	Norristown	73.2	73.2	73.1	1.500	4.841	5.020
"	Harrisburg	....	79.6	78.1	0.592	3.687	2.853
"	Morrisville	70.3	71.9	71.6	3.200	7.000	4.600
"	Philadelphia	75.3	76.6	75.7	1.050	6.290	3.080
"	Lima	71.5	72.9	71.2	1.065	6.890	2.960
Md.	Baltimore	77.7	78.5	77.9	0.150	2.491	4.725
"	Frederick	77.2	77.2	75.3	0.389	4.141	4.059
"	Schellman Hall	74.0	74.2	77.2	.....	2.625	6.625
"	Washington	75.0	....	77.5	2.353	5.346	4.555
Va.	Alexandria	76.0	76.4	76.0	2.872	5.108	5.992
"	Buffalo	77.0	75.1	75.7	0.638	3.899	2.733
"	Lewisburg	74.0	75.0	75.5	2.300	4.400	2.450
"	Bruns. Co.	....	....	....	2.600	5.800	4.000
"	Portsmouth	79.6	....	....	0.390	.....	.....
S. C.	Camden	79.3	80.3	78.6	3.312	7.163	5.763
Ga.	Savannah	79.0	81.5	79.4	0.787	6.464	8.168
"	Whitemarsh, Id.	....	80.9	78.6	1.280	5.280	5.580
"	Sparta	81.6	82.8	....	0.710	5.350	.....
"	Culloden	81.7	81.6	80.4	0.370	9.810	1.180

MEAN TEMPERATURE AND PRECIPITATION MONTHLY. (*Continued.*)

	STATIONS.	MEAN TEMPERATURE.			AMOUNT OF RAIN.		
		June.	July.	Aug.	June.	July.	Aug.
Ga.	Penfield	.....	77.8	76.7	0.228	3.720	1.900
Fla.	Jacksonville	78.9	81.7	82.5	3.240	7.400	2.700
"	Knox Hill	78.7	79.9	79.9	3.454	7.519	.....
"	Cedar Keys	80.1	83.2	81.9	3.262	11.475	3.625
"	Talahassee	80.6	80.0	81.0	2.820	7.920	4.670
"	Pensacola	80.0	82.1	82.4	1.262	2.512	1.566
Ala.	Eutaw	83.7	81.4	81.2	0.780	8.933	5.806
Tex.	Austin	80.8	82.0	81.0	.....	.....	.....
Tenn.	Knoxville	75.3	.....	.....	1.409	.....	.....
"	Glenwood	76.4	75.4	74.5	0.900	3.671	4.525
"	Lebanon	79.5	77.7	.....	1.052	4.987	.....
Ky.	Danville	79.3	.....	76.5	0.360	.....	3.485
"	Millersburg	78.1	75.6	74.9	.....	.....	.....
Ohio.	Cincinnati	.....	75.6	.....	.....	4.810	.....
"	Marietta	75.0	73.1	.....	0.650	3.706	1.340
"	Mount Vernon	78.9	.....	.....	2.350	.....	.....
"	Granville	74.3	.....	72.6	1.300	.....	4.060
"	Zanesville	76.0	76.8	75.7	.....	2.173	.....
"	Cleveland	68.5	.....	.....	3.417	.....	.....
"	Oberlin	75.5	70.8	73.4	2.110	3.790	4.760
Mich.	Detroit	76.5	75.0	.....	2.567	2.333	.....
"	Ann Arbor	71.4	69.6	72.2	0.710	1.100	3.960
"	Brooklyn	73.6	71.2	.....	1.500	1.710	.....
"	Battle Creek	74.3	71.5	73.5	1.600	1.560	1.000
Va.	Richmond	.....	73.5	.....	1.220	3.045	5.585
Ill.	Athens	75.4	73.3	73.9	5.520	3.870	3.650
"	Alton	75.7	74.3	74.9	.....	3.102	2.304
Ia.	Fort Madison	76.7	75.9	76.0	7.650	3.800	5.050
"	Muscatine	.....	68.6	70.9	6.400	6.600	1.700
"	Poultney	70.5	68.8	68.6	3.304	6.325	0.520
"	Bowen's Prairie	72.3	68.7	70.5	.....	6.600	0.760
Wis.	Platteville	74.4	72.3	74.9	3.625	7.750	1.125
"	Janesville	73.2	69.1	....	2.620	4.630	.....
"	Beloit	73.1	68.7	71.4	4.950	8.100	.....
Minn.	Lac-qui-parle	65.8	68.9	70.6	.....	6.750	.....
Ind.	New Harmony	79.3	77.7	.....	1.230	2.430	.....
Wis.	Madison	70.1	67.8	70.3	.....	.....	.....
"	Emerald Grove	70.7	69.0	71.9	.....	.....	.....
"	Bellefontaine	71.4	70.0	71.3	.....	.....	.....

ART. II. — *Case of Amputation at the Shoulder-Joint.* By CHARLES FREIOTT, M. D., one of the Surgeons of the Troy Hospital, New-York. [With a Wood-cut.]

JOHN CHRISTOPHER STEVENS, a stocking-weaver by occupation, aged forty-six, of a melancholic temperament, a native of Saxony, had been in this country about six weeks. On the morning of the 5th of July last, while engaged in undermining a bank of clay about eight feet high, near the steam mills of the "Albany Nail Factory," the bank caved in upon

him, forcing the right arm between the spokes of one of the wheels of a wagon he had been loading. In order to get room to extricate him, the driver, not knowing the situation of his arm, drove his team forward, and thus added to the injury. Soon after the accident he was seen by my colleague, Dr. James Thorne, and other physicians, who recommended his immediate removal to the Hospital, where he arrived about eleven o'clock.

On examination, the humerus was found to be comminuted at about three inches below the head. The integument and muscles were torn away, leaving the bone exposed from the anterior and external side of the neck of the humerus, from a line one inch posterior to the acromion process, to the insertion of the pectoralis major muscle. His pulse was very small and thready, and his extremities were cold. Brandy was given him very liberally, which in a short time produced slight reaction, when I commenced the operation, with the concurrence and approbation of my colleague Dr. Thorne, and several medical gentlemen of this city.

The first step of the operation consisted in removing the torn shreds of muscle on the anterior and external portion of the shoulder. I then cut through the integument and muscle to the bone, commencing an inch below the acromion process of the scapula, to a point corresponding to the insertion of the latissimus dorsi into the humerus, when it became necessary to ligate the posterior circumflex artery, which for a moment bled very freely. The posterior flap was dissected to the glenoid cavity, afterwards the anterior flap was also dissected back, and both were held back by an assistant. I then passed a scalpel from the anterior to the posterior flap, just below and close to the internal portion of the neck of the humerus, and made an incision an inch and a half in length. I now directed one of my assistants to pass his thumb into the wound in the axilla, and compress the artery while I completed the section of the axillary artery, vein, muscles, and integument. The artery was immediately seized and ligated without the loss of a drachm of blood. The dissection was now continued until the joint was exposed,

which was punctured, and the head of the bone easily disarticulated. My assistants, during this part of the operation, strongly retracted the flaps, thereby enabling me to have plenty of room to see and feel the capsular ligament.

The wound, after being thoroughly sponged, was dressed by bringing the opposing flaps together, and retaining them by sutures, after which a compress of lint was laid on the wound, and retained by strips of adhesive plaster, and cold-water dressings applied.

July 6th.—Patient complains of considerable pain, and had slept very little, pulse 90 and full, tongue clean and no appetite; ordered morphiæ sulph. gr. ¼, at night, and continue cold-water dressings.

July 7th.—Has passed a good night, little pain, pulse 80,

tongue clean, has a good appetite, feels cheerful, asks permission to drink "lager-bier," which was granted, with full diet, cold-water dressing, and morphine at night continued.

July 8th.—Rested well, pulse 72, other symptoms favorable. A slight discharge was noticed to issue from underneath the dressing, accompanied with slight odor. The dressings were removed, when several maggots were seen in the pus, which was of a healthy appearance; creosote lotions were used, with a dressing of resin cerate, and the morphine was continued at night.

July 9th.—Symptoms still favorable, wound looks healthy, the upper and lower portions are uniting by first intention. Continue the same treatment as yesterday.

The patient now continued to improve daily, with chloride of soda and creosote lotions, and an occasional application of the nitrate of silver. The ligature came away on the 28th of July. The pulsations of the artery, which, from the time of the operation, were forcible, from this time began to diminish, and now are scarcely perceptible. The wound was cicatrized, excepting about half an inch, on the 28th of August, at which time the accompanying drawing was taken.

ART. III.— *Cases Illustrative of the Action of Ergot in causing Retention of the Placenta.* By CHARLES HASBROUCK, M. D., of Rockland Co., N. Y.

"SPASMODIC contraction," or "premature contraction" of the cervix uteri, is referred to by obstetrical writers as an occasional cause of retention of the placenta; and Dewees, in his *System of Midwifery*, mentions the fact, that in some instances of this character, the body of the uterus is also found to be "hard and well contracted." But so far as my information extends, the frequent relation between this condition of the uterus and the administration of ergot during labor has never been pointed out. The following cases, it seems to me, are calculated to show that such relation does occasionally exist; that the placenta may, perhaps not unfrequently, be retained by the permanent and uniform contrac-

tion of every part of the uterus, excited by the specific action of ergot upon that organ.

CASE I.—Mrs. P—— D——, aged about twenty years, was taken in labor with her first child, Sept. 20th, 1842. Her labor progressed slowly with pains of moderate severity for about fifteen hours, when, without any appreciable cause, they entirely ceased. The vertex, at this time, was found occupying the superior strait with the occiput to the left acetabulum. The uterus remaining inactive, and the soft parts being perfectly relaxed, I ruptured the membranes, in the hope of reviving uterine contraction. No pains ensuing, however, and nearly twenty-four hours having elapsed since the commencement of her labor, I emptied the bladder and rectum, and administered, in divided doses, a drachm of the ergot in decoction. The peculiar action of the drug soon manifested itself in the powerful and almost constant contractions which ensued, and in about an hour the child was expelled, completely asphyxiated. On placing my hand upon the hypogastrium, I was astonished at the unusual hardness of the uterine globe. But although the body of the uterus was thus firmly contracted, the woman was entirely free from pain. On following up the cord, the contraction was found to extend to the cervix and os uteri. The placenta was beyond the reach of my finger. I waited an hour and a half, hoping that the cervix uteri would relax sufficiently to allow the placenta to pass; but the whole uterus remaining firmly contracted, I introduced my hand into the vagina, and with great difficulty succeeded in dilating the os sufficiently to enable me to grasp, or rather to hook down the placenta. The patient convalesced slowly with symptoms of prolapsus uteri.

CASE II.—Mrs. J—— B——, aged nineteen years, was taken in labor with her first child, Sept. 14th, 1843. From the commencement of labor, her pains were short, infrequent, and inefficient. She had been in labor twenty hours, her pains having become expulsive, though still short and inefficient, the vertex being engaged in the superior strait, the os uteri being fully dilated, and the membranes protruding

almost to the os externum, when she was suddenly seized with violent convulsions, which continued to recur every half hour or hour during the subsequent progress of her labor. After copious venesection, &c., I emptied the bladder, and gave a decoction of a drachm of ergot, in divided doses, without any appreciable effect in hurrying the action of the uterus. The vertex, however, continued to advance, and had got low down in the pelvis, when, upon the suggestion of Dr. R. W. Stevenson, who now saw the patient with me, a tablespoonful of a very strong decoction of the ergot was given every fifteen minutes. The uterus gradually responded to the stimulus of the ergot, and the child was slowly expelled, twenty-four hours after the commencement of labor. The woman now lay entirely unconscious, while the convulsions continued to recur. The uterus was firmly contracted, presenting the same unusually hard and solid feel as in the above case, while the placenta was firmly retained by the contracted state of its cervix and os. After waiting two hours without any change occurring in the condition of the uterus, I passed my hand into the vagina, and succeeded with considerable effort, in dilating the os uteri sufficiently to enable me to reach the placenta, which, together with my hand, was immediately expelled. The woman had a tedious but safe convalescence.

CASE III.—Mrs. M—— D——, aged 39 years, was taken in labor with her first child, Sept. 2d, 1848, forty-eight hours after the spontaneous rupture of the membranes. Her labor progressed slowly but regularly, for thirty-six hours. The os uteri being then dilated, the soft parts relaxed, and the vertex occupying the superior strait, while the powers of the uterus seemed to flag, her pains becoming shorter and less frequent, I gave her the ergot without producing any effect. Four hours later, the patient having procured some sleep from a dose of morphine, I gave her more of a very strong decoction of ergot, regardless of quantity. The peculiar pains of ergotism soon followed, the vertex advanced, and the child was shortly delivered. The uterus immediately contracted upon the placenta, feeling like marble under my

hand. Neither pain nor flooding was present, and on following up the cord, the os uteri was also found contracted to about the size of a quarter of a dollar, presenting a firm, almost cartilaginous feel. I waited an hour and a half, hoping that the uterus would relax, but fearing that any longer delay would only tend to increase the difficulty of overcoming the stricture (if I may so term it) of the os uteri, I introduced my hand into the vagina, but found it impossible, without using an unwarrantable degree of violence, to pass more than a couple of fingers into the os uteri. With these, I succeeded after considerable effort in hooking down the enclosed placenta. The patient had a rapid convalescence.

CASE IV.—Mrs. A—— B——, aged 20 years, was confined with her first child, Oct. 22d, 1850. From the commencement of labor, the uterus acted feebly, the pains being extremely short and infrequent. Her labor progressed slowly however, and in twelve hours the os uteri was fully dilated. Her pains now became expulsive, but the vertex advanced with extreme slowness, in consequence of the shortness of each pain. Hoping to excite the uterus to more vigorous action, I ruptured the membranes; but failing in this, and the vertex occupying the pelvic cavity, fifteen hours after the commencement of labor, and three hours after the discharge of the liquor amnii, I gave the decoction of a drachm of ergot. This had the desired effect, and the woman was soon delivered of a fine, healthy girl. On placing my hand upon the hypogastrium, the uterus was found to be hard and well contracted. As soon as the child was separated from the mother, I passed my finger along the cord and found the placenta lying over the os uteri, which was also contracted to the size of a half dollar, and moderately firm. Feeling confident that it would be useless to wait for the spontaneous expulsion of the placenta, and believing that delay would only increase the difficulty of its manual delivery, by giving the cervix and os uteri more time to become permanently contracted, I at once passed my hand into the vagina, and with but little difficulty succeeded in dilating the os, so as to reach and withdraw the placenta. The woman had a good "getting up."

It is well known that the placenta is ordinarily detached and expelled, a few minutes after the birth of the child, with little or none of the peculiar pain that attends the parturient contractions of the womb. Indeed, it appears that the uniform contraction of the whole uterus, the general shortening of all the uterine fibres, the circular, as well as longitudinal, which necessarily follows the expulsion of so large a portion of the contents of the uterus, in other words, the simple tonic contraction of that organ, is all that is usually necessary to accomplish this result. Hence arises the rule of practice, when the placenta is retained in consequence of uterine inertia, that by frictions, cold, ergot, &c., we must endeavor to excite the tonic contraction of the womb.

But in this, as in other matters, extremes occasionally meet, and the same action of the uterus which, when moderate and normal, will usually accomplish the delivery of the placenta, becomes, when abnormal and excessive, the very means of retarding its expulsion, and of rendering its delivery very difficult. And such was the difficulty in the above cases. The uterus was not felt high up, nor flabby, as in uterine inertia, but was found low down in the abdomen, and presented to the feel that marble hardness which is both the evidence and result of strong uterine contraction. Not the least flooding was present. Indeed, there was no discharge of any kind whatever; and I also noticed an entire absence of that alternate relaxation and contraction of the womb which usually follow the expulsion of the child, and which can easily be felt by the hand placed upon the woman's abdomen. In short, the placenta was completely encysted, and firmly retained, in consequence of the permanent tonic contraction of the uterus being prematurely and excessively developed; and that this premature and excessive contraction resulted from the specific action of the ergot upon the uterus, there can scarcely be a doubt.

The action of ergot seems to be principally directed to the lower portion of the spinal cord, promoting in an extraordinary degree the innervation and tone of the muscles and tissues to which the lumbar and sacral nerves, and the nerves

of the hypogastric plexus are distributed. This is proved by the benefit that results from its use in paralysis of the bladder, and in partial or incomplete paraplegia; and it is probably by virtue of the same action that it is of such essential service, as I have frequently observed, in the sciatic pains, and weakness of relaxed and debilitated habits.

The uterus, it is true, is supplied with nerves from the sympathetic system, and most probably "is not itself dependent upon the spinal cord for its power of contraction." *(Carpenter.)* This would seem probable from the fact, that delivery has taken place by the spontaneous contractions of the uterus, in cases of paraplegia from disease of the lower part of the spinal cord. But while the peristaltic or parturient contractions of the uterus, like the contractions of the heart, or intestines, may perhaps be, in a great measure, independent of its nervous connection with the spine, yet its numerous reflex sympathies and actions prove conclusively that the several nerves of the cerebro-spinal system which pass into the plexuses of the sympathetic, and are thus distributed to the uterus, are not without their appropriate influence. Indeed, it would seem probable, that while the peristaltic action of the uterus, as in ordinary parturition, is in some way connected with its supply of ganglionic nerves, its condition of muscular tonicity, or its tonic contraction, may be dependent upon its connection with the spine. And as irritation of a motor nerve excites contraction in every part of the muscle supplied by that nerve, so the powerful influence exerted by the ergot upon that part of the spinal cord from which the spinal branches of the uterine nerves are derived, excites every part of the uterus, its cervix and os, as well as its fundus and body, to strong and permanent contraction, thus offering, as in the above cases, a very serious impediment to the passage of the placental mass.

I am not sure that these suggestions harmonize with received opinions in relation to the physiology of uterine contraction. But whether they do or do not, or whatever may be the *modus operandi* of the ergot, there can be no uncertainty in relation to the fact, that it possesses the prop-

erty of increasing the tone, and promoting the contraction of the uterine fibre. Its beneficial effects in passive menorrhagia, that protracted and exhausting drain from the uterine vessels so often met with in relaxed and leucorrhœal habits, prove that it is capable of increasing the innervation and organic contractility of the capillaries of the womb; and no one engaged in obstetrical practice can doubt its power of exciting the muscles of that organ to prompt and powerful contraction, when given in the progress of labor.

The contractions thus excited differ, however, from the ordinary contractions of parturition, in partaking less of a peristaltic character, being more constant, and affecting equally the circular and longitudinal fibres of every part of the uterus; and it can be easily understood that the cervix and os uteri may thus become so firmly contracted under the influence of large doses of the ergot, as to offer a complete obstacle to the delivery of the placenta. Indeed, so entirely convinced have I become of this danger, from the results of my own observation, that latterly, whenever I find it necessary to administer ergot to expedite the expulsion of the child, (and particularly in first labors, in which the tonic contraction of the uterus is generally more promptly and more perfectly established,) I have at once proceeded to the delivery of the placenta, as soon as possible after the separation of the child. By acting thus early, as soon as the tonic contraction of the womb is decidedly developed, but before it becomes permanently and completely established, I have, I think, in several instances, avoided the difficulty which was encountered in the above cases.

ART. IV.—*Cases of Cancer occurring in the Abdominal Viscera, with Remarks.* By JONATHAN KNEELAND, M.D., late President of the Onondaga County Medical Society; Hon. Mem. of the N. Y. Path. Society, etc., etc.

THE obscurity which hangs over the origin and progress of internal cancerous diseases renders it highly desirable that the history of those affections should be carefully noted, that

the relation of their signs and symptoms to the pathological lesions may be better understood. The victims of this class of diseases become also the subjects of every shade of irregular practice, to their manifest injury. In no particular can we render more essential service to our patients than in the accurate diagnosis of malignant diseases in their incipient stages, and the subsequent prevention of a resort to unscientific treatment. The following cases were drawn up as they occurred in practice, and may serve a useful purpose in calling the attention of practitioners to this interesting but most obscure class of diseases:

CASE I.—*Cancer of the Pancreas and Stomach.*—Mr. B., aged 64, a farmer and mechanic by occupation, had for four or five months preceding my first visit to him, been under the care of a Thompsonian practitioner, and previously to that he had been treated for upwards of a year, but at different times, by two regular physicians. His last attendant had treated him for "liver complaint" and "water brash," and among the remedies lobelia emetics held a prominent place. I found him extremely emaciated, skin of a dingy, pale, bloodless hue, chest well formed, and on physical examination giving no evidence of disease of the lungs. He complained of a "deathly distress," confined principally to the epigastric region, and increased by nourishment; had vomited his food for more than a year, and could not now swallow more than two tablespoonfuls of liquid food at a time, owing to the distress which it produced; his ability to vomit seemed greatly diminished since he took the emetics, but his suffering was now much greater than when he readily rejected whatever he swallowed. The matters vomited were colorless, mixed with a tough mucus, and had a saltish taste. On examining the epigastric region, a hard tumefaction could be distinguished, which was not tender or pressure. My diagnosis was a tumor of a malignant character within the stomach, or in close contact with that viscus. The treatment ordered at this visit was anodynes, ext. conii, and sulph. morphiæ, to alleviate his "constant deathly pain," and control the abortive attempts to vomit; and for diet, corn starch was

recommended. At my second visit, I gave him Pearson's arsenical solution in small doses thrice daily, but was obliged to discontinue it and increase the anodynes, as the retching seemed to be increased by the use of the mineral; I also ordered lavements of tepid chicken broth four or five times a day, and of salt water twice a week to move his bowels. He lived about four weeks from this time, and suffered less from the pangs of protracted starvation than for some months previously. He constantly attributed his difficulty to an injury received from a restive horse, which crowded him forcibly against the side of the stable about a year before, since that he had never been free from "that bad feeling at the pit of the stomach." I learned, however, on inquiry, that previously to this accident he had occasionally vomited his food, and complained of a sinking sensation about his stomach, and that he had gradually lost flesh.

Autopsy Eighteen Hours after Death.—Emaciation considerable; abdominal muscles pale and atrophied, no sign of fat; *liver, spleen, and kidneys* anæmic in appearance, otherwise normal; *pancreas* somewhat enlarged and hard; that portion of the stomach to which it adhered was wholly changed from its normal appearance, except the mucous membrane, which was merely corrugated over the tumor, and appeared more pale than natural throughout its whole extent. More than one-half of the stomach seemed to have been drawn into adherent contact with the pancreas, which, together with the stomach, was pale, and of the consistence and appearance of a raw potato incised, but more fibrous. The only trace of primitive structure in either organ was in the mucous membrane of the stomach, and the posterior covering of the pancreas; the remainder seemed to have been transformed into one mass of scirrhus, homogeneous in structure and appearance, having no trace of blood-vessels or membranes, and of a uniform dull or yellowish white color. Its fibrous arrangement could be seen extending from side to side like the crystals of muriate of ammonia.

That portion of the pancreas which was in contact with the duodenum was in a condition similar to the rest, and the

duodenum was adherent to it and hardened, but not as much contracted at the point of adhesion and thickening as the stomach. The cavity of the stomach was also very much diminished, and not capable of holding more than a gill. The large blood-vessels of the body were empty, and the heart contained but very little red blood.

Remarks.—This case presents several points of interest. Scirrhus degeneration of the pancreas is rare, and as a primitive affection has erroneously been supposed never to exist. Dr. Bigsby, *(Edinb. Med. and Surg. Journal, vol.* 44.,*)* in an analysis of twenty-eight cases, found that in eight cases of long standing not the slightest derangement had advanced beyond the pancreas. It is not easy to decide which organ was first implicated, the pancreas or stomach, but we should be led to infer the former. Begin was of the opinion that scirrhus of the pancreas often followed that of the small curvature of the stomach, or under surface of the liver, but in no case did Dr. Bigsby find this to be the order of sequences. Dr. Walshe *(Nature and Treatment of Cancer)* makes the following interesting remarks on this point. "When cancer of the pancreas is solitary, it is, of course, primary. When associated with cancers in unconnected, and more or less distant organs, it is almost invariably secondary, and simply signifies that the diathesis has reached the pancreas. When continuous in substance with carcinomatous productions in adjoining structures, pancreatic cancer is, as far as I can discover, almost invariably primary. While I find numerous cases in which the disease has spread from the pancreas to the duodenum, omentum mesentery, liver, and even the suprarenal capsules and kidneys, I cannot feel satisfied that the propagation has, in any case of really cancerous affection of the pancreas, certainly taken place in the converse direction, though an assertion to this effect is very deliberately made by M. Bouillaud. Possibly, implication of the proper structure of the pancreas may in some cases arise consecutively to that of the circumjacent lympatic glands ; cancerous ulceration of the stomach, having the pancreas for its basis, is not by any means necessarily attended with cancerous infiltration of the latter organ."

The symptoms of scirrhus pancreas are by no means uniform. The disease may be entirely latent in its course. Of twenty-seven cases collected by Dr. Abercrombie *(Path. and Pract. Researches on Dis. of Stom., &c.,)* six were fatal with gradual wasting and obscure dyspeptic complaints, without any urgent symptom. Pain is a very variable symptom, though some authors place much reliance upon it. Dr. Pemberton *(Dis. of Abdominal Viscera)* says "there is deep-seated pain in the region of the stomach, and more or less sickness with emaciation." Heberden *(Commentaries, &c.,)* relates cases in which severe and long-continued pain in the epigastric region was a prominent symptom; and Sandwith mentions a case where the pain occurred in the most violent paroxysms. In the present instance the pain amounted merely to a feeling of distress. It may however be entirely absent. Emaciation has also been regarded as a constant symptom. Dr. Pemberton says, "the body is often reduced to the utmost state of emaciation, and the integuments of the abdomen appear almost to rest on the spine." The same appearances were presented in the case which we have above related, and might lead to the supposition, that, by the suspension of the function of the pancreas in digestion, the assimilation of fat was prevented, but the experience of other observers does not confirm this view. Dr. Abercrombie records a well-marked case of cancer of the pancreas, in which, upon laying open the abdomen, a coating of fat two inches in thickness was cut through.

The symptoms in the present case, referable to the stomach, are readily accounted for by the complications which existed. The extreme contraction of the viscus has been noticed by some writers, and this condition combined with the scirrhus degeneration, gave rise to the distress following the swallowing of food and the prompt rejection of the contents of the stomach. As softening had not yet taken place, it is probable that some symptoms of pancreatic disease were not fully developed, though Dr. Claessen was led to believe, from his analysis, that the sum of symptoms was more considerable before than after softening had occurred. The anæmic ap-

pearance of all the tissues from the exhaustion of the blood, without softening or hemorrhage, is worthy of remark. A similar case is given by Abercrombie, where the pallor and emaciation were very striking during life, but no marked symptoms were present to account for the changes. The autopsy revealed a scirrhus pancreas as the only morbid lesion.

CASE II.—*Cancer of the Liver.*—Mr. S., aged 78, farmer, had, some thirty years previous to his death, a soft tumor form in the left inguinal region, which was supposed to be a hernia. He had never worn a truss, nor had the hernia ever been strangulated. During the last eight years his bowels had not moved naturally, the stools having been obtained with great difficulty, and were invariably liquid. He often took large quantities of powerfully purgative medicines without producing an evacuation of his bowels. Enemata were always rejected as soon as they were thrown into the bowels. For several years he had been anasarcous, and had an erythematous condition of the legs with obstinate ulcers upon the ankles.

Autopsy Thirty-six Hours after Death.—Cadaver large, adipose thick, cuticle separated from the skin over the back, scrotum, and depending parts; vesicles filled with sanguinolent serum on the lower limbs; abdominal muscles large and dark colored; the investing peritoneum attached by a strong band of false membrane, extending from near the umbilicus to the upper surface of the right lobe of the liver. The liver was made up of a congeries of irregularly rounded masses, of a yellow color, and of variable consistence; the softer parts were marked by red points and lines; in some places the investing membrane of the organ was destroyed, and where softening had commenced it was replaced by a reddish gelatinous matter, which could also be scraped from a section of the harder portions; the upper or convex portion of the liver was mostly broken down, of a dirty green color; the suspensory ligament was partly transformed into a yellowish, hard substance, resembling the tumors in the liver. The liver weighed five and three-fourth pounds. The diaphragm, at its point of contact with

the liver, was thickened and eroded, and at this point of its pleural surface the right lung was adherent and hepatized; in other respects the lungs were healthy. The substance of the heart was thinner and softer than natural; and its lining membrane, as also that of the aorta to the arch, was of a dark color; two points of ossification were observed in the arch where the membrane appeared abnormally thickened.

The tumor in the left inguinal region was hard and fibrous, four inches long by two inches thick, and adherent to the omentum, of which it was doubtless a part at an early period of its formation. It was also firmly connected with the descending colon by fibrous bands, which seemed to be a continuation of the investing tunic of this portion of intestine, thickened and lengthened three inches, extending from the tumor through the inguinal ring and reflected over each side of the colon at its point of attachment. At this point the colon was brought in close proximity with the internal ring, and was very much obstructed by the ligation of this fibrous band; on cutting it loose, however, the calibre of the gut was not diminished. Other organs were healthy.

Remarks.—Cancerous formations occur more frequently in the liver than in any other organ in the body. This is due partly to its anatomical relations to other organs, but principally to the nature of its functions and the peculiarity of the circulation through its tissues. Cancer limited entirely to the liver is, however, a comparatively rare affection. Of twenty-nine cases of cancer of the liver collected by Dr. Budd *(On Diseases of the Liver)*, three only were confined to that organ. In the present instance it had evidently just begun to pass the limits of the liver and invade the surrounding structures. Cruveilheir notices the fact that, when the cancerous mass is seated on the convex surface of the liver, it may eat through the diaphragm and excite inflammation of the pleura. In this case the disease had attacked the diaphragm, and caused the adhesion of, the lung corresponding to that point.

The progress of the disease was latent; and, from the slight suffering complained of, and large accumulation of fat, there must have been no constitutional disturbance. Although the

structure of the liver was much encroached upon by these heterologous formations, yet, as they seldom or never excite inflammation in the surrounding tissue of this organ, it is probable that the functions of the organ continued to be performed sufficiently well to meet the wants of a system so much reduced by age. The thinned and softened state of the heart observed was probably rather due to advanced age than to the affection of the liver. Hasse *(Path. Anat.)* mentions thirteen cases of fatty degeneration of the muscular substance of the heart, co-existing with disease of the liver, of which six were past seventy years of age, and inclines to the opinion that this condition of the heart depended upon the age of the patient.

One of the most interesting features of the present case was the existence of an old omental hernia, having such peculiar attachments to the colon. The appearances here noted satisfactorily account for the necessity as well as inefficiency of cathartic medicines, the liquid stools, and, finally, the prompt expulsion of injections.

CASE III.—*Cancer of the Kidney.*—Mrs. L——, æt. fifty-one, twice married, and mother of eight children, enjoyed good health until the cessation of her menses. For the last five years she had been in delicate health, and had consulted various physicians in regard to her difficulties, with the effect of obtaining the indefinite opinion that there was "some trouble about the liver," and that "the nerves were becoming affected"—an opinion which, singularly enough, often proves satisfactory to persons suffering from obscure chronic diseases. She was never for any length of time under the care of a regular practitioner, but passed from the charge of mesmeric clairvoyants into the hands of homœopathists. Before her death, a hard tumor made its appearance in the right hypochondrium, which was considered by her attendants as confirmation of their diagnosis of trouble about the liver. I occasionally met this lady during the latter period of her illness at the house of a mutual friend, and became satisfied, from her appearance and the character of her pains, that she was laboring under the cancerous cachexy. The peculiarity of complexion which marks the

cancerous diathesis, after the blood has become deteriorated, called by authors the "putty-colored skin," "the dingy white complexion," etc., is readily detected by the observant eye; and, as I had at this time two cases of rapidly advancing external cancer in my practice, I could not fail to notice these prominent points of identity. I expressed my convictions of the malignant nature of her disease to her friends, as she was extremely averse to any opinion of her case less favorable than that given by her homœopathic attendant.

For some three months previously to her death, her right leg had been retracted, and was the seat of acute pain, as was also the spine. Micturition and defecation had for many weeks been productive of intense agony, and the urine, which for more than a year had contained dark shreds and a heavy sediment, became quite clear. The emaciation was considerable, and some œdema of the feet made its appearance during the last few days.

Autopsy Thirty Hours after Death.—Abdomen distended with liquid, except upon the right side, which was occupied by a hard tumor filling the right hypochondrium, and the right upper portion of the umbilical regions. The integument over the tumor was more dense, and cut less easily than on the opposite side. The right side of the abdominal cavity was filled with a dark-colored, thick fluid, which was mottled, and streaked with a yellowish gray substance, having the appearance of thick pus, and intermixed with shreds of false membrane; the bowels were crowded over to the left side, and, in connection with adventitious formations, circumscribed the limits of the matter in that direction. The matter had descended, however, and burrowed under pouparts ligament, forming a small tumor on the inside of the right thigh; the psoas and internal iliac muscles of the right side were entirely wasted, and their places occupied by this thick, dark matter.

The right kidney was five or six times as large as the left, (which was natural in size and appearance,) hard and irregular, its lower extremity the seat of fungous ulceration, its ureter sloughed through, and its pelvis occupied by a concretion of a dirty gray color, sending small branches upward into the

kidney, and a larger downward three-fourths of an inch into the ureter. From the upper and outward part of the kidney sprang a large cyst extending to, and in contact with, the under surface of the liver, its cavity being filled with purulent matter much lighter colored than that found in the abdomen. On section of the kidney very little of its normal structure was found to exist; the whole mass appeared to be transformed into true encephaloid cancer, having centres of induration which seemed to have approached each other by slow growth, and crowded the original structure of the organ into irregular thin cells. With the exception of the spleen, which contained some hard, gray points of a doubtful nature, all other organs of the abdomen were free from disease. The transverse processes of two vertebræ lying contiguous to the lower and ulcerated portion of the kidney, were denuded and rough, and in immediate contact with the black matters.

Remarks. Primary cancer of the kidney is rare; as secondary to the cancerous diathesis, it is of comparatively frequent occurrence. The right kidney is more often affected than the left; and males are more subject to the disease than females in the ratio of 3 : 2. Encephaloid is by far the most frequent variety of cancer in this locality. The duration of the disease is stated by Dr. Walshe to average about eight months; but he had only six cases from which to obtain a mean.

The morbid appearances in the present cases were unusual. The collection of matter in the region of the kidney must have been owing to an extension of the ulceration of the lower portion of the organ; the matter burrowing under the peritoneum, and along the muscles of the lumbar and iliac regions, doubtless gave rise to symptoms of psoas abscess, and the œdema of the lower extremity preceding her death. The destruction of the ureter some days before death prevented the passage of the cancerous debris into the bladder, which accounts for the natural appearance of the urine at this time. The coincidence of calculous formations in the kidney, and cancerous degeneration of this organ has been observed by Dr. Bright.

ART. V.—*Case of Hemorrhoidal Affection of Seventeen Years' Duration successfully treated.* By JOHN MCCALL, M. D., Utica, N. Y.

Hon. G. S., aged 56, of nervo-sanguine temperament, abstemious and regular habits, consulted me on the 20th of June in relation to an old and painful disease of the rectum. On examination I found six large hemorrhoidal swellings, of a dark purplish hue, filling the extremity of the gut, and attended with great pain and difficulty, not only in the passage of the stools, but also in the return thereafter of these tumors within the anus.

The patient stated that he had been operated upon seventeen years ago in Albany, for the removal of piles; and that he was placed on the floor for that purpose, and only the larger and more troublesome swellings were tied and allowed to slough off.

During the last few years he has suffered much pain, not only in having a passage of the bowels, but also from six to twelve hours thereafter. His disease was called neuralgia by a homœopathic physician whom he consulted, and not till he obtained my opinion and advice in the case did he ever think of submitting to a surgical operation.

Neuralgia, it is believed, has been a convenient receptacle into which obscure cases and ailments, not always understood, could be thrown aside, or out of the way of close investigation. The result of this operation shows how much credit was due to the opinion given in the case, as to its neuralgic origin or character. Surgical operations and post-mortem examinations serve a valuable purpose, both to the community and the profession, in dissipating mistakes and labored speculations. Untiring examination, and taking nothing on trust, not even truth till thoroughly investigated, should alone fully satisfy the medical inquirer.

The patient's rectum having been cleared of fœces by an enema of water, and the tumors thereby forced out, he was placed on the edge of the bed with his back to the window, his feet resting against a box placed in contact with the washboard of the room; and in this position the tumors

were seized, drawn down, ligated and cut. The large and fragile state of four of them made it necessary to pass needles armed with double ligatures through them transversely, to obviate the danger from bleeding, and also hasten the process of sloughing.

The tumors were cut off near the ligatures, and these closely to the knots, and the protruding parts returned within the anus. Ice was applied to the part, an anodyne draught administered, and the patient placed on the bed. He was somewhat exhausted from the heat of the day and the severity of the operation, rather than from the loss of blood, the amount of which was but little. My friend and assistant, Dr. Wolcott, with his accustomed skill and kindness, rendered me great aid in the performance of the operation.

Mr. S. had been a good deal unwell for several days with influenza before consulting me, and at the time of the operation his tongue was furred and his cough troublesome.

We remained with him nearly two days and all one night. The following diary, dictated by my patient, accompanied by a letter expressing great joy at his cure, exhibits very satisfactorily the subsequent progress of the case:

June 22*d*.—Operation between 11 and 12 o'clock, A. M. Severe pain all the afternoon and all night. No sleep.

23*d*.—Pain somewhat diminished, but still severe through the day and night. Had a few minutes of opium-sleep in the morning.

24*th*.—Pain considerably diminished, but still pretty severe all day and all night; no sleep, except now and then a few minutes of opium-sleep.

25*th*.—Still incessant pain in the rectum, day and night; a couple of hours' sleep in the morning.

26*th*.—Incessant pain in the rectum, day and night, greatly aggravated by taking warm sitz baths; from two to three hours' sleep in the morning. The sympathy of the urethra with the rectum has rendered urination quite painful, from the time of the operation to the present. My protracted torments in the rectum remind me of Dr. Wesselhoeft's opinion that my rectum is the seat of neuralgic pains.

I have eaten no meat nor vegetables. All I have eaten since the operation until this 27th June, 2, P. M., is four slices of cream toast, a pint of tapioca, and nearly a quart of strawberries. I have drunk about a pint of good rich milk. I have had no fever, no thirst, no hunger, and no desire for a stool. I began to void wind on Friday night, since then I have voided a great deal, and the odor is extremely offensive.

27*th.*—In the forenoon considerable and incessant pain. The pain almost entirely ceased at 2½, P. M. I continued free from pain until near morning. No sleep, exceedingly wakeful all night.

28*th.*—Made two ineffectual attempts at a movement of the bowels, with about an hour's interval. More than a quart of water injected at each time. The thorough washing and cooling of the rectum afforded much relief. Began at 3 P. M. to sit up. At 5, P. M., returned to my ordinary food, meat, potatoes, &c., though quite sparingly. Had a little pain all night in the rectum, though I slept considerably.

29*th.*—At breakfast with the family, having sat up and walked about for a couple of hours before. Made another ineffectual attempt at a movement of the bowels. Had very little pain, and so little in the night as to be able to sleep a great deal.

30*th.*—Made between morning and bedtime three ineffectual attempts to have a passage; one of them brought away a great deal of clotted blood.

July 1*st.*—All my injections before were pure cold water. This morning I tried a mixture of warm water, milk and molasses. It was perfectly successful. It gave me no pain, the parts being healed. A slight pain set in a couple of hours afterwards, lasting, however, only an hour or two. It is worthy of remark, that there was no turning out when I had the passage. I rode out this morning and felt very comfortable. The difficulty with the urine has ceased.

ART. VI.—*Paracentesis Thoracis performed on a Child Seven Years of Age, for Pleuritic Effusion—Rapid Recovery.* BY WM. A. TRACY, M. D., Hollis, N. H.

I WAS first called to see this patient on the 26th of last June, and was told by the mother that he had enjoyed good health until about three months previously, when he caught cold by going into a pond, and since then had been troubled with dyspnœa, and pain in the left side, and had gradually been declining.

I found him in the following condition: habit scrofulous, emaciation great, anorexia, pain in left side, and most marked on full inspiration, dyspnœa, pulse 120, tongue coated. Examination of the chest gave the following signs: dullness of resonance over entire left lung, and increased resonance over right; absence of all respiratory sound on the left side, and puerile respiration on the right; point of the heart's impulse full two inches to the right of the mesian line; bulging of left intercostal spaces. Treatment, potas. acet. in full doses, blister to side, and dov. pulv. *pro re nata*, as an anodyne.

July 2*d.*—I was called in haste, and found the patient laboring under urgent dyspnœa, and speechless. The pulse was very weak, and, according to the nurse, it was imperceptible at the wrist an hour previously. Under the free use of stimulants, and the application to the chest of camphor and ether, he gradually revived.

July 3*d.*—Dr. Graves, of Nashville, was called in consultation, and an operation being refused by the parents, the lad was put upon hydrarg. cum creta, with dov. pulv. in doses sufficient to keep the bowels confined. We also applied a large blister to the left side. At 5, P. M., I was again called in haste, and found the sufferer laboring under another attack of dyspnœa, still more severe than the day before; but, under similar management, he this time also revived.

From this date till the 6th, the patient lay on his back, inclining to the left side, with head raised, and nostrils widely dilated. The gravity and urgency of the symptoms conti-

nued, and he was evidently sinking every hour, when the parents gave their consent to an operation.

July 7th.—This morning chloroform having been administered, the operation of puncturing the thorax was performed by Dr. Graves, Dr. Lyford and myself being present. An incision was made with the scalpel between the 6th and 7th ribs, and a trocar introduced, through the canula of which a quart of straw-colored serum escaped; and, at each inspiration, air freely entered the wound. On withdrawing the instrument, adhesive plaster with a binder was applied. In the afternoon I saw the patient again and found his dyspnœa relieved, and his pulse at 110. He said, "I feel much better, and I can breathe easier."

July 8th.—Continues to improve, and amuses himself with his playthings; pulse 120, and tongue less coated; treatment, blister to the side.

July 9th.—Tongue clean and moist, pulse 120, steady; gave potas. iodid. and quinine.

July 15th.—Pulse 115, tongue clean, appetite good, heart gradually returning to its proper place, and bronchial respiration can be heard in the left lung.

July 22d.—The patient has gradually gained strength and flesh, and now walks out. The left side measures half an inch less in circumference than the right, and the respiratory sounds in the left lung are distinctly audible though faint. He has no cough or dyspnœa, and his appetite is good. There is air yet in the pleural cavity; the position of the heart is nearly natural.

Aug. 1st.—Gains flesh rapidly, pulse 100, the heart in its natural situation, and the function of the lung restored. In fine, the patient is well; and it may be said that paracentesis saved his life, when he had sunk to the lowest stage of the disease, in which the usual remedies were of no avail.

Dr. Graves used in this case a common-sized trocar, not having at hand Dr. Bowditch's suction pump, for preventing the admisssion of air into the pleural cavity. He thinks a common trocar preferable, in such an operation, to any complicated instrument. He has opened into the pleural cavity

several times, when air was admitted, without any serious or disagreeable consequences arising. Much danger is apprehended from the admission of air into the cavity of the chest, in the operation of paracentesis thoracis, and it is this fear, that deters many from operating and saving the lives of their patients. The operation however affords the only means of relief, and a fatal termination occurs solely in consequence of neglect to puncture the thorax in due season, and draw off the fluid. Dr. G. is of opinion that the fatal cases which follow the operation are more justly attributable to neglect than to the effects of air that may enter the chest on a sudden withdrawal of the fluid.

Art. VII.—*Case of Poisoning of an Infant with the Bi-Chromate of Potash.*—By William B. Bibbins, M. D., Visiting Physician to the Demilt Dispensary, New-York.

On the 24th of June, at 10.20, A. M., a little girl brought word to the Dispensary that an infant in the immediate neighborhood had swallowed particles of an article believed by its mother to be poisonous, a specimen of which she handed to the apothecary. While he and myself were determining its character, the messenger, not having reported the patient's residence, left unobserved. Nearly twenty minutes elapsed before she returned, so that I first saw the case at 10.40, A. M.

The history of the occurrence was, that the older children the night previous had broken open a paper of the bi-chromate of potash, which the father had obtained for the purpose of experimenting in dyeing, and scattered portions about the floor. In order to engage in ironing, the mother, a few minutes past 10, A. M., seated the baby, aged nine months, on the floor, but not five minutes after discovered it sucking a medium-sized crystal of the poison. She instantly caught away the substance and sought, as related, medical aid.

To render free from ambiguity all terms employed in the narration, it may be proper here to remind of Taylor's classification of poisons into irritants, narcotics, and narcotico-

irritants. The declared properties of the bi-chromate of potash require in this connection a passing notice. Dunglison *(Med. Dict.)* describes it as "a violent irritant poison." The United States Dispensatory characterizes its action as "that of an irritant and caustic." Taylor states that "it is an irritant as well as a corrosive poison, affecting also powerfully the nervous system." Beck *(Med. Jurisp.)*, after quoting in detail from the *London Medical Gazette* an instance of its deleterious effects, remarks: "The reporter supposes this substance to act powerfully on the *nervous system*, as the death was early, with but slight gastritis; and to be rather sedative than irritant."

In the individual in question, the only symptom of illness previous to my arrival, was profuse and frequently repeated vomiting; moderately dilated pupils (said to be their natural state); a neither pale, nor flushed, but placid countenance, absence of pain throughout, and slight disposition to drowsiness, apparently owing to a habit of sleeping at this hour, made the presumption strong against the fact of any of the offending matter remaining in the stomach. To ensure, however, entire removal of its contents, pulv. ipecac ʒss. was administered, and subsequently to the operation of the emetic, mucil. acaciæ, as a demulcent. At the expiration of an hour's attendance, nothing beside a rather increased tendency to somnolency appearing, I took leave with directions to repeatedly rouse the patient, if inclined to lethargy, and at once send information.

Between five and ten minutes past 12, M., the mother herself summoned me a second time, announcing the child in a dying condition. I found it in *profound narcotism*, with eyelids half-closed, contracted pupils, no stertor, thirst very considerable, and pulse intermittent. In the interum, it had had a copious natural evacuation of the bowels, and, as before, repeated vomiting. The more recently ejected fluid, as to color, exactly corresponded to a solution of the poison. That cast up antecedently contained some blood. A decided negative reply was received to the inquiry, whether any opiate had been given.

As to the result, all seemed *very* unfavorable. During the continued examination the pulse once ceased so long that I said to the woman acting as nurse, not in the hearing of the mother, that "it had stopped, and probably never would beat again."

The treatment consisted simply in often renewed attempts at waking, such as shaking the head, tickling, and slapping the hands. Suddenly and unexpectedly, about 1.30, P. M., the boy awoke, looked with interest at the children gathering around, at each of them as their names were respectively called, recognized its mother with a smile, and clasped in its hands a watch. Fifteen minutes after this extraordinary transition, emesis took place with an instantaneous relapse into coma. A repetition of these phenomena occurred three quarters of an hour later, 2.30, P. M. Meanwhile, Dr. Thebaud had accepted an invitation to call, and expressed, on leaving, assurance of a favorable termination. Dr. Henry G. Cox also visited in company with me, at 3, P. M., during the third sleep, and suggested allowing a stream of cold water to fall upon the head. It instantly recovered the patient to complete consciousness, and there followed nothing indicative of disturbance of his usual health, except an aphthous mouth about the fourth succeeding day.

The principal points here presented upon review show: *First*, Incontrovertible evidence of swallowing the poison *Second*, That the quantity thus taken was small. *Third*, That the narcotic predominated over the irritant properties of the salt. *Fourth*, That the irritant qualities of the compound caused expulsion of the solids and liquids of the alimentary canal, probably corrosion of the mucous membrane, to some extent inferable from the hæmatemesis, without manifestations of pain, closing of the hands, contraction of the feet, drawing up of the knees, crying, moaning or restlessness being exhibited.

Two peculiarities, it is believed, belong to this case, so far as we have been able to ascertain, viz.: all of the previous cases have proved fatal. They were also, as far as we know, adults. The distinctions alluded to, then, consist of the age and non-fatality.

ART. VIII.—*Remarks on Milk-sickness and Trembles.* By I. N. CONVERSE, M. D. (Submitted to the Faculty of Starling Medical College, Columbus, Ohio, as an Inaugural Thesis for the Degree of M. D.)

THIS disease may truly be called one of a malignant character. It prevails in many places in the western part of the United States, and generally during the summer and autumnal months, commencing about the first of July, and terminating as soon as vegetation is destroyed by frost. It commences earlier, and is more general and more malignant, in dry, hot seasons than in others.

The cause of milk-sickness, in its primitive form, is not easily settled. In fact, it is as yet almost entirely unknown. In the horse or cow, may be found a perfect sample in the earliest form of its development. In other animals and man is another form (secondary) of the same disease, which seldom varies from the first, but is produced from the milk or flesh of animals, and has never been known to change or lose its character, though transmitted through other animals; its first development is, however, confined to the lower animals that feed upon vegetation. It has been supposed by some that malaria alone is capable of producing it; others believe that vegetables may; among which the Rhus is supposed to be the chief cause; others ascribe the disease to minerals, others still to water, &c. I believe, so far as I have yet learned, that no cause has been suggested but what serious objections may be urged against it, and for the very reason that many peculiarities connected with its development are not yet understood.

The particular localities where the disease generally or always prevails, is along the borders of streams passing through level countries, timbered chiefly with white elm and soft maple, interspersed with numerous small prairies; along their borders it is said to be always found, but it entirely disappears as soon as the timber is removed and the land cultivated. That the cause exists in such places is proved by the fact that, when cattle and horses are brought from high and healthy pastures, and confined in narrow limits in those localities, they soon fall victims to the disease. Hay cut in or near such places and fed the following winter has produced it, and this is the only way that it has ever been known to exist after vegetation was destroyed by freezing.

Cattle brought from healthy pastures and allowed to pasture in these dangerous places, are more liable to fall victims to the disease than cattle which have been raised there; young and fat cattle are more subject to it than others, and cattle more than horses. During lactation the disease is never found, so far as my observation or knowledge

extends. Farmers living in districts where the cause of trembles exists, have taken much care to study the cause, and it has been found that a few precautions will obviate very much the danger of the disease. Where animals are not permitted to feed upon the grass while the dew is upon it, there is but little if any danger, and more especially if you give them good, healthy water, plenty of salt, and afford a well-ventilated place for sleeping.

The length of time between taking the poison (for such it is) and the development of the disease, varies according to the quantity taken by the animal. Some animals have been exposed for a length of time, then taken into healthy pastures, and some weeks after the disease was developed. This is done often by warming the blood of the animal by worrying, running or exciting it. Hence the custom among cattle merchants and especially butchers, to worry and run cattle before purchasing, where there is the least suspicion, which is regarded as a sure test. At other times animals are attacked soon after receiving the poison, for I have known many cattle die in a few days after having escaped for only a few hours from a healthy pasture into an infected district. I think it is generally developed earlier when taken from the milk or flesh of poisoned animals. One instance occurred in the central part of Ohio, where poisoned meat was used for dinner, from which five persons died; among whom was a physician from the state of New-York, who called to dinner, ate freely of the beef, was attacked with vomiting at the table, and died in twelve hours with many symptoms of narcotic poison; the others did not die so soon, although within a few days.

The question whether the system has the power to eliminate the poison has been frequently asked. There is no doubt in my mind but the system has this power when small quantities are taken, or not enough to bring the system immediately under its influence. In this case, as in other cases of poison, the proper requisites or conditions are necessary, such as energetic vital forces, or reaction, rest, &c. It has been ascertained that one animal poisoned is capable of poisoning many more. Each pound of his flesh is capable of poisoning many other animals, and these as many more, &c. I have no doubt, the same poison may be propagated thus in succession to any number of animals.

Malaria is also named as a cause of trembles. This is not certainly known to be a cause, although many forms of bilious disease exist where sick stomach or milk-sickness prevails. If it arises from malaria, why is it often latent until winter in hay, butter, &c., and not always prevalent when there is the greatest amount of decomposition going on? If vegetation is the cause, among which the *Rhus Toxi-*

codendron stands first, why is it that fields and woods abound with it in many places and the disease is not known? Or why, in confining cattle in small lots where the *Rhus* has never been seen, do they soon fall a victim to the disease? It is also said that minerals or mineral waters produce the poison. Some springs that have been charged with producing it, causing much excitement, have afterwards been found to be good, healthy springs, and have been used safely for many years. As soon as the country was improved, the cause of trembles, milk-sickness, sick stomach, &c., disappeared. Good water, a healthy, ventilated place for sleeping, &c., are no doubt necessary for the health of both man and beast.

It has been supposed by some observers that mineral agents, effluvia, or some poison, may mingle with the dew that collects upon the vegetation, which is permitted to escape when the dew evaporates, but which may be taken into the system by feeding upon the plants while the dew is upon them.

When the disease is found in the lower order of animals and produced from the primary or unknown cause, the symptoms are, first, general lassitude, a great relaxation of the nervous and muscular power; in a few days, and sometimes in a few hours, the patient is unable to stand, followed by tremors (hence the name trembles) which continue till death; or, if the patient recovers, he is subject to the same trembling for many years, when over done or excited; the eyes are sunken, there is a profuse flow of saliva, circulation at first small, is soon followed by reaction; the bowels first constipated, but, upon reaction, are unloaded freely, a profuse discharge continues, inflammation of stomach and bowels increase rapidly; the patient drinks much, and becomes insensible to surrounding objects; loss of nervous energy, relaxation of sphincters, gangrene and death often follow.

The treatment is principally confined to dry corn and salt in the early state of trembles, which is said to give relief, and which the animal will take freely, having an abnormal appetite so great as to eat almost any thing given. The lower order of animals that take the poison from milk or flesh, &c., die from similar symptoms, rather more aggravated, and which terminate sooner, and cannot as often, if ever, be cured. It is produced oftener perhaps in places where the trembles are found, by feeding cats and dogs with milk at night, for the purpose of testing its condition, which will show itself before morning if poison be in it. This is done in many before using the milk otherwise, and is said to be a true test.

In man the true milk-sickness or sick stomach is, I believe, invariably produced by the milk, flesh, butter, &c., of the animals that have

already received the poison into their systems. It is contended by some that the disease is produced by contagion; this is probably not the case, although many forms of bilious diseases are found where and whenever the milk-sickness prevails.

The *first symptoms* that are calculated to excite suspicion, are a loss of nervous energy, general lassitude with nausea. Sometimes a number of days pass in this way, followed by a loss of appetite, great constipation of the bowels, disposition to sleep, dull headache, pulse small, tense and frequent. The symptoms may exist for a greater or less length of time, when the patient is suddenly seized with vomiting, continued and severe, the discharge is a thin mucus, sometimes tinged with bile; the patient is disposed to excite vomiting, which generally gives momentary relief, the tongue at first is covered with a white thin coat which soon passes off, leaving it red, dry and swollen, the secretions are very scanty, &c. As soon as the patient is attacked with severe vomiting, a reaction takes place in the circulation, the pulse is full and frequent, the eyes are sunken, and the vessels are distended with blood, great thirst, aversion to every thing but the coldest drinks, inflammation goes on to ulceration; gangrene and death follow. About the fifth, seventh, or ninth day, they frequently become insensible to all surrounding objects, with a total suspension of nervous influence.

The symptoms are very characteristic, such as severe vomiting, constipated state of the bowels, with a loss of nervous energy; the vomiting is accounted for from the irritation and subsequent inflammation of the mucous membrane of the stomach, from the action of the poison.

Constipation of the bowels does not seem to depend so much upon the presence of hardened fœces (as they are seldom found in the early stage of the disease, though Dr. McIlheny claims hardened fœces to be the only cause of constipation) as upon a suspension of nervous influence, which necessarily lessens the peristaltic motion, and paralyzes the muscles connected with defecation; and they are so perfectly paralyzed that the patient has no more control over them than if he were dead. Their power is invariably restored as soon as a free operation upon the bowels takes place, which may be regarded as the effect perhaps rather than the cause. The paralysis is doubtless the effect of the narcotic influence of the poison. I should state that a peculiar odor is given off during vomiting, which is always readily recognized by all who have once noticed it, the same smell can be detected in the lower animals, when under the influence of the poison, and frequently in the perspiration for a long time afterwards.

When children are attacked with milk-sickness, which is generally from milk, the train of premonitory symptoms cannot be so readily

detected as in adults; vomiting is first discovered, followed by many symptoms of narcotic poison, and death is the result generally. I believe I have never known a case of this kind to recover.

The *treatment* of milk-sickness has been a question of much importance among the physicians living in the districts where the disease is found. I believe that all acknowledge that, as soon as the bowels are opened, the greatest difficulty is overcome, particularly if inflammation has not gone too far. The different modes by which this is to be accomplished have been numerous.

In the first settlement of the western country, the common practice was to commence with calomel as soon as vomiting began, and continue its use, in from twenty to sixty grain doses, every two or four hours, until an operation was produced, or until one fourth or one *half a pound* was taken; if the bowels were not moved by this time, the case was considered a hard one, and *severer means* must be used, and then one half pound of quicksilver was given, which soon found its way through the patient and seldom failed *to kill.* I have known a few cases of this kind recover, treated upon general principles afterwards. Others recommended the use of Epsom salts, dissolved in mucilage, given in small quantities, at regular intervals, which, it was said, acted as a febrifuge, and also called from the neighbouring tissues into the stomach the poison to be evacuated by vomiting, always an urgent symptom, and thus unloaded the system of its contents; at the same time it urged its way along the canal, and eventually effected catharsis, the main object sought to be attained. Many families have treated themselves successfully in this way in its milder forms, believing that though they called a physician they should die; these means were aided, of course, by fomentations, counter-irritants, etc. Many other methods of treatment have served their turn as hobbies, such as frequent blood-letting, warm bathing, spirits turpentine, table salt, etc.; these have mostly fallen into disuse.

The more recent course of treatment, amongst learned and judicious practitioners, seems to be based upon a more intelligent appreciation of symptoms, and corresponds more nearly with common-sense principles.

I do not know as I can better define my views of the treatment of milk-sickness, than to relate the treatment given by Dr. J. A. Skinner, of South Charleston, Clark Co., Ohio, in a letter to me upon the subject some time since. "It consists," he says, "in the first place, in moderating the arterial circulation by venesection, when the pulse is found frequent and full, then take sulph. magnesia one ounce, aqua ammonia half an ounce, *boiling water* four ounces; of this mixture give a teaspoonful once in fifteen or twenty minutes, until it operates as a

cathartic. This composition will usually arrest the vomiting in from twenty minutes to half an hour perfectly; and I administer no other medicine until catharsis is procured, after which alterative doses of sub. mur., hydrarg., may be advantageously used, to excite the hepatic secretion, which is usually all that is required, except the precautions usual to convalescence." He further adds, in the same communication, "that there is a number of circumstances in the history and propagation of this disease of peculiar interest. And, first, as to the Rhus Toxicodendron's being the origin of the disease, why does not the disease exist in western New-York, where the Rhus grows in abundance, and where no such disease was ever known in man or brute. Second, in the southern parts of Huron and Lorain counties, Ohio, the cause is supposed to reside in water or poisonous exhalations. But, if such is the cause, why are not brutes, as well as man, subject to the disease? but no such disease was ever known there among the cattle as trembles, though the disease prevailed extensively among the early settlers, and hundreds died with it before the country became settled; since that time, I believe, the disease has entirely disappeared. The true cause of this disease may never be satisfactorily ascertained, and the above treatment originated with me on the supposition that the system was laboring under the influence of a poison, and that a diffusive alkali would neutralize it, which subsequent treatment has fully proved. I have, for some years previous to this, been in the habit of using the aqua ammonia with sulph. mag., as above, in cases of poison by the ivy; and, frequently, when cases occurred in persons poisoned without knowing by what agent, I have used this preparation with the happiest effects; and in those cases I depend upon this compound alone."

I have no doubt but what the disease may be treated successfully upon general principles, applicable to the treatment of most diseases.

The want of post-mortem investigations in this disease, still leaves the pathology much in the dark.

In making the few suggestions that are presented here, I have attempted to sustain nothing but what I have either tested myself or have derived from those in whose veracity I could put full confidence. And if I shall hereby benefit one individual in any one respect, I shall be fully rewarded for my labor.

PART SECOND.

CRITICAL ANALYSIS.

ART. IX.—*On the Pathology and Treatment of Acute Rheumatism*, Being the Lumleian Lectures delivered before the Royal College of Physicians in 1853. By JAMES ALDERSON, M.D., Senior Physician to St. Mary's Hospital, etc. London, 1853, 8vo. pp. 107.

On Rheumatism, Rheumatic Gout, and Sciatica, their Pathology, Symptoms, and Treatment. By HENRY WILLIAM FULLER, M.D., Assistant Physician to St. George's Hospital, etc. London, 1852, 8vo. pp. 403.

Urinary Deposits, their Diagnosis, Pathology, and Therapeutical Indications. By GOLDING BIRD, A.M., M.D., Assistant Physician to, and Lecturer at Guy's Hospital, etc., etc. Fourth Edition, revised and enlarged. London, 1853, 8vo. pp. 473.

MORE than seventy years ago, Heberden wrote that "The rheumatism is not more like the gout in its appearance, than in the little progress which has hitherto been made in settling the proper method of cure; which perhaps is partly owing to the different disorders which have been called by this name." And it must be admitted that this just remark of that sage observer applies too aptly to the present state of medical knowledge upon this subject, so far as accurate and scientific attainments by the great mass of physicians are concerned.

The nature of the morbid processes and conditions which produce and constitute rheumatism, are so occult and complicated that the progress of scientific knowledge in reference to the disease must necessarily be gradual and slow; hence much that is faulty and defective in the current pathological notions concerning this disease in all its varied forms, and hence the empirical character of the treatment usually pursued in its cure. But that a rational pathology, and a strictly scientific therapea, will soon take the place of absurd hypotheses and vague conjectures in reference to rheumatism and its treatment, we think is not only promised, but actually

realized in part in the works we propose now to examine. These several treatises and their respective authors very happily represent classes of labors and of laborers that are essentially requisite in the erection of the temple of rational medicine. We have the patient and skillful philosopher and zoo-chemist; the indefatigable student and statistician; and the bold theorist, who by studying the great outline facts and principles, and by generalizations and inferences, attempts to arrive at final conclusions and ultimate principles in pathology and therapeutics. Dr. Alderson and his work appear in the latter character, while Dr. Fuller has honored his position as a student, registrar, and physician, in one of the largest and best of British hospitals. Dr. Golding Bird has won a position of high eminence as an analyst and a philosopher, and with untiring zeal and unequalled success he has labored with Prout, Liebig, Franz Simon, Lehmann, and others, for the development of those analytical and zoo-chemical facts and general physiological principles, upon which to base a rational therapea in reference to every form of disease. His treatise on *Urinary Deposits* is, or should be, already in the library of every physician, and we propose to examine only that chapter of the last edition of the work, now for the first time published, especially for the direct and practical bearing which it has upon the pathology and treatment of rheumatic affections.

In his first lecture, Dr. Alderson reviews the leading facts connected with the pathological phenomena, and with the chemistry of the blood and the secretions observed in rheumatism and other inflammatory affections; and from these, aided by certain *hypotheses*, concerning *fibrin*, he deduces his theory of mechanical obstruction in the circulation, as the peculiar and proximate cause of rheumatism.

In his second lecture he endeavors to substantiate his views by further arguments and illustrations; and hastily reviews and rather summarily sets aside the current arguments and theories of his contemporaries.

The third lecture is devoted to the argument derived from the results of the various modes of treatment, "with those to be looked for," supposing his theory to be true.

Dr. Alderson is an easy and ingenious writer, and when but superficially examined, his reasoning seems to be logical and sound; but we think that, upon a faithful and diligent investigation of the premises upon which he bases his theory, there is apparent too much of unwarranted hypothesis and misconception of fact, to warrant the reception of his views as even probably correct. He has evidently heeded the parable proposed by Henlè, concerning the pedant and the nightingale; but, according to that racy author, Dr. Alderson at least deserves our respect: "for," says Henlè,

"an hypothesis which becomes dispossessed by new facts dies an honorable death." (*A Treatise on General Pathology.* Ame. Ed., 1853.)

After making some criticisms upon modern authors, Dr. Alderson thus states his design and the plan of his argument: "My intention at present is to examine all the facts, bearing on our subject, which modern science has furnished to us within the last few years, such as the state of the blood, the secretions, the tissues, &c.; to state the characteristic symptoms for which we are to endeavor to account; and from these materials, arranged and collected, I hope to form a chain of reasoning of which the links shall hang so closely and aptly together as to support the weight of a general inference applicable to the explanation of the subject before us." And he remarks, *in limine*, that "he conceives it is the very riches of the new revelations on the nature of texture and chemical analysis which seduce the moderns, rather to labor like gold-finders in accumulation of their treasures, than to pause and use the whole weight of intellectual power in turning those treasures to account." This being his conception of the value and uses of simple facts, it is easy to see why Dr. Alderson has chosen to discuss the subject of rheumatism in the manner he has. But we have always found that the surest method of arriving at the truth is by the collection, comparison, and correction of simple facts; this being accomplished they readily wheel into line for practical service.

Dr. Alderson proceeds to notice the chemistry of the blood and the urine, as given by Andral and Simon, and earnestly invites attention to the similarity which obtains in the condition of these fluids in true, admitted inflammation, and in acute articular rheumatism:

The most striking modification to be observed in these results is the increase of fibrine in inflammation. It will be of consequence, however, to bestow some attention on the other deviations displayed from the natural standard, viz., the diminution of the blood corpuscles and albumen.

In regard to the urine, which, being secreted from the blood, would be expected to be placed by disease in a position relative to that of the blood itself, it is found in general inflammation to be darker than usual; it has an acid reaction, and usually a high specific gravity. The quantity of urea is not much changed, but the uric acid is very much increased. The salts are always diminished, especially the chloride of sodium. It is therefore apparent, as far as these secretions are concerned, there is no alteration of component parts, in consequence of disease, which can be especially attributed to, or identified with rheumatism. From this identity of change, I draw a conclusion that what are called two diseases are so far identified in character, that inflammation may be considered as the genus, and rheumatism as the species; and it will be my task hereafter to trace the nature of those particular circumstances which induce the general disease to pass into the special.

The principal deviations from the standard of health seem to consist, in regard to the blood, in the excess of fibrine and the diminution of blood corpuscles. In regard to the urine, in the excess of uric acid and of urates, could we determine whence these changes arise, how they proceed, and how the several constituents are formed in the organism, it would be an important step towards elucidating the precise nature of general inflammatory disease, and of that particular type which is called rheumatism. To trace the actual formation, or course of production of the normal constituents of the blood, would materially advance the inquiry into the nature of the diseased condition. Perhaps the most important of these constituents is the fibrine. In its natural state it appears to be a grade of development beyond the albumen or the blood corpuscles. * * * Yet there are pathological considerations which indicate that it is not *directly* or *consecutively* by the expenditure of albumen that fibrine is generated. It is stated by Robin and Verdeil, that it is formed from albumen by what they term isomeric catalysis; this suggestion is, however, no more than bestowing a new name on the process of conversion. * * * If it be true that fibrine is formed directly from the albumen, we are unacquainted with the conditions which govern its change into that specific state. The slight diminution, however, in the relative proportion of albumen in inflammation, corresponding to the large relative excess of fibrine, leads us to discard this idea, and to conclude that the fibrine does not come, directly at least, from this source. There is, however, a more tenable supposition, founded on pathological observation, (viz., the constancy with which the proportion of fibrine in the blood is augmented upon the supervention of inflammatory disease, whatever the condition of the individual attacked.) It has been ascertained, as we have already shown by analysis, that the amount of fibrine in inflammation always varies inversely as the mass of the blood corpuscles. The respiratory process is known to increase not only the plasticity of the blood, but also the quantity of fibrine. On the other hand, the amount of fibrine is diminished in blood which is not efficiently brought into contact with oxygen. If, therefore, blood be more rapidly and more frequently passed through the lungs, it becomes more highly fibrinated by appropriating to itself more oxygen. The converse of this proposition is no less established, viz., that blood which stagnates in vessels loses fibrine; for the fibrine is then consumed, and, in consequence of the stagnation, no fresh supply of oxyginated blood can be furnished. I invite especial attention to this last stated part of the proposition, because I shall have to use it presently as the foundation on which to build an important part of my argument. * * * I have now to show, that under the influence of cold, or of cold-taking rather, the process of conversion into fibrine is accelerated, and that that constituent of the blood is made to be present in an undue proportion. The generally-admitted cause of rheumatism is the influence of cold upon the surface of the body, together with a sudden admission of cold atmospheric air to the blood circulating through the air-cells of the lungs.

I will consider first the effects of cold on the blood of the lungs. In most cases, persons who are the recipients of this injurious conse-

quence of cold, have been previously exposed to an atmosphere vitiated by an excess of carbon; when having suffered a temporary privation of oxygen, the organism accepts, with renewed avidity, that necessary agent for the vital change in the blood. The blood corpuscles, appropriating the oxygen in excess, the binoxide or the tritoxide of proteine of Mülder, or what we call fibrine, is formed in larger proportions than is compatible with the healthy state. * * * The vast number of inflammatory attacks take place in certain peculiar atmospheric conditions, when the atmosphere may be considered in a chemically-excited state, or, in other words, when the ozone of Schönbein is present. It is apparent that fibrine and albumen, not being formed in the various secretions of the body during health, must in the normal state be expended in the processes of nutrition, which processes take place in the capillary system, by virtue of a power there resident to assimilate these constituents of the blood; when these processes are interfered with by the abstraction of heat at the surface, and by the constricting effects of cold on the extreme vessels, fibrinated blood then passes through vessels, the cells of whose capillary network ought to be employed in selecting and assimilating the nutritive parts of the blood; these vessels then permit the blood to pass through them, and thus fibrine in excess, unconsumed in the peripheral system, is transmitted to the veins, &c. * * * To recapitulate the various points insisted upon, we have fibrine formed in the lungs by the sudden application of chemically-excited oxygen, and we have simultaneously a stoppage of the processes of nutrition at the periphery; we have a super-oxyginated blood transmitted to the capillaries, and by those capillaries that super-oxyginated blood transmitted to the right side of the heart; we have this super-fibrinated blood stimulating the heart to increased action and we find this action further increasing the fibrine by means of a quickened circulation, while at the same time the continued want of the consumption of the fibrine at the periphery still promotes its accumulation.

Such, briefly, is the view which Dr. Alderson takes of the pathology of the blood in inflammation, and such his conception of the importance of the facts already but imperfectly understood in pathological hæmatology. We will shortly proceed to examine our author's statements of this class of facts, together with the following application which he boldly makes of them. He remarks:

The facts are all fully borne out and received, and nothing has been added but to connect them in one comprehensive view of cause and effect. * * Having traced, to the best of our ability, the pathology of the blood and secretions in common inflammation, we have next to inquire what are the external symptoms which characterize acute rheumatism. What, then, is that which gives to rheumatism its specific character? * * In the blood, the chief characteristic is equally, in both diseases, that excess of fibrine which we have been examining. The urine in both has the same high color, scanty quantity, and identical constitution, having excess of urates, and deficiency of chlorides. The distinctive character, therefore, lies in none of these; but rheumatism

differs from common inflammation in the superadded symptoms of pain, heat, redness, and swelling of the joints, and in that which has formerly been called "metastasis," which consists in a sudden and complete change of the seat of the local affection.

Dr. Alderson next examines the structure and arrangement of the articular tissues, particularly with reference to the mode of vascular supply in the fibrous structures. He says:

The capillary vessels in the fibrous tissues are, in the natural state, of necessity compressed within and between the bundles of inelastic white fibrous tissue, and are, in a manner, bound down by it. This is a distribution of vessels and tissues especially liable to become the locality where circulating fluids may be obstructed; and the inelasticity of the white fibrous tissue is eminently calculated to increase the dense packing of the accumulating fluid. The combination of parts is precisely such as would offer obstruction to the transmission of blood which is not normally constituted, and the resistance which is offered to distension is calculated, not only to create obstruction, but to cause pain. Now, as we have observed, that the vascular supply of the fibrous membrane of the joints is most delicately and minutely distributed, the nature of the organ, which partakes more of a firm resisting bandage, causing that vascular supply to be distributed in more minute vessels than in the other tissues of the body, it is a plain conclusion that the plastic fibrinated blood is likely to be delayed in its transmission through the minute calibre of those vessels more easily than in other parts. * * By the continued existence of the obstructing cause within the joint, and by the pressure without, this delay gradually becomes a stasis, more or less complete; and if we here take into consideration, that it has been shown by the microscope that such a stasis does, in common inflammation, actually occur in parts where the vessels are not bound down by fibrous tissue, there can be no difficulty in supposing that such a stasis would take place, in far greater degree, where those binding tissues exist. If this combination of parts not only is calculated to offer resistance to transmission, but is so to an extent not to be found elsewhere in the organism, a reason appears why those tissues and this locality of the joints should be selected as points of attack; or rather, why the blood, being in an abnormal state, should there become first obstructed. * * * We deduce from this a reason to account for the seizure of the joints in preference to any other parts of the body, and we can account for the pain which is the consequence of the distension of vessels. * * The redness which we perceive in rheumatism may be accounted for by considering that, when blood is delayed in vessels, and not submitted to the action of oxygen, the metamorphosis of the blood corpuscles does not proceed; and hence the corpuscles, arrived at a state of maturity, are not consumed, and consequently there is an accumulation of coloring matter.

Concerning the so-called "metastasis," our author reasons thus:

When the delay of blood takes place in the vessels, the fibrine is, as

we have already shown, dissolved, and in consequence of the ensuing stasis, no more fibrine can be supplied to the part from the general circulation; the fibrine is in the circulation in excess, but the existing stoppage hinders its approach. The solution of the fibrine, therefore, proceeds in that quantity of blood which is delayed and accumulated in the locality of the joint, and tends to restore the balance towards the normal proportion in that quantity of delayed blood. Blood, therefore, which has been accumulated by means of this stasis has been subjected to a sort of purifying process; and the fibrine, having become no longer in excess, the disturbed relation between the vessels and the constituents of the blood in that particular locality no longer exists; the capillaries no longer resist the transmission, and a free passage for the blood is once more obtained. Hence the depuriating process being complete, we may see a mode of accounting for the desertion of one point of attack. The local attack—or in more explanatory words, the process of obstruction, of accumulation, and of restoration of the balance of the constituents of the blood by a solution of the fibrine—has, by this time, it is true, caused a return to the normal condition of so much of the over-fibrinated blood as happened to be clogged in the delicate vessels of the part last affected: but the general over-fibrinated state of the blood continuing to pervade the system throughout, and having experienced but very partial relief from the small quantity lately restored and depuriated, it is naturally to be expected that other joints, either in turn, or several simultaneously, may offer a similar obstruction to the abnormal blood, which will then and there go through the same renovating process.

Though we cordially agree with Dr. Alderson, that of all the objects to be desired in the study of pathology, a more comprehensive classification of disease is the very first, "we are not quite prepared to expect," as he suggests, "that the time will ever come, in the history of medicine, when all the departures from a healthy state of the human organism will be recognized as modifications of one single disturbance." Most of all, we do not conceive that true science and the great interests of the healing art are or ever can be very directly promoted by the aid of theories or hypotheses, however ingenious, unless such theories are based upon absolute facts, and their legitimate and necessary relations. We think that Dr. Alderson has been unfortunate in his statement and use of the elemental facts upon which he has based his interesting propositions. Of the real nature and value of the leading facts upon which he reasons, it is manifest that he sadly misconceives. When we witness such use of the rich mine of the yet imperfectly understood facts revealed to us by organic and iatro-chemistry, we are ready to exclaim with Henlè, "Would that the fruits brought to maturity in sudden heat might not hasten to a speedy decay! and above all, would that they might not be abused to decoy us back again into old fetters!" We had conceived the highest respect for Dr. Alderson as a physician of high and sound

scientific attainments; and it is, therefore, with no pleasure that we object to his reasonings as well as to his statement of facts.

He has brought forward a theory not new, so far as the idea of mechanical vascular obstruction is concerned, but entirely novel as concerns the statement and arrangement of the facts upon which it is based, and were the statements which he has put forward as absolute and indisputable facts, really such, rather than uncertain hypotheses, or, at the best, uncertain and indefinite facts, his theory would perhaps be satisfactorily established, so far as the proximate causes of the local inflammation are concerned.

Let us briefly examine the main points in our author's argument, as indicated in the quotations we have made from his first lecture. He claims, first, that the only and the characteristic alteration in the condition of the blood in rheumatism consists in an increase of the fibrine, and an exactly relative diminution of the red corpuscles. Second, he adopts, as established and undisputed truth, John Simon's theory of the formation, relations and uses of the fibrine and the red corpuscles. Third, he bases his whole theory of rheumatism upon the hypothetical idea of a natural and primary mechanical obstacle to free circulation in the vessels supplying the articular structures. Fourth, and finally, he endeavors to account for "*metastasis*," and other characteristic phenomena of rheumatism, by certain hypothetical and highly improbable changes in the blood itself. It will be observed that Dr. Alderson's argument and theory are based upon the presumed accuracy and entire completeness of hæmatological science, and especially of the statements and analyses which he quotes from Andral and Gaverret, Becquerel and Rodier, J. Simon and others. While we admit the excellence of his authorities upon this subject, we would direct attention to the important fact which is candidly stated by the latest and the best of all authorities in animal chemistry, viz: Prof. Lehmann,* who remarks that "we must confess with sorrow, that even at the present day, the analysis of the blood must be ranked among the most uncertain and untrustworthy investigations in the whole department of analytical chemistry." The general facts in reference to the elemental and the physiological chemistry of the blood are well established and easily understood. It is known that the blood consists of certain morphological elements, viz.: the red corpuscles, and the colorless corpuscles, floating in a plasmatic fluid composed of albumen, saponified fats, and certain salts, together with a certain small proportion of albumen, which is in a transition state known as fibrine, which,

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* *Physiological Chemistry.* Vol. II, p. 214, Cavendish Edition, 1853.

like the albumen, is in a state of complete solution in the circulating fluid. The chemical and all the correlative physical characteristics of the several constituents of the blood have been most diligently studied by the ablest chemico-physiologists, the delicacy of whose manipulations, and the accuracy of whose investigations are as reliable as they are surprising; but no one has yet been able to solve the first problem relating to the formative agencies and processes by which the blood-corpuscles are generated, and no one has yet ascertained what are the internal chemical and physiological changes they undergo, or what is the grand purpose they serve; nor have the united labors of all these able investigators yet demonstrated the exact relations and functions of the fibrine of the blood; much less has it yet been demonstrated that any general or special pathological process is immediately or remotely dependent upon any special alterations or abnormities in either of these constituents of the circulating fluid. In this inviting field of inquiry, where the most subtle chemistry, and the most delicate microscopy and elaborate research have thus far proved completely impotent, Dr. Alderson offers us a theory based upon certain fluctuating hypotheses, which he states as being clearly demonstrated facts.

Boerhaave did no worse than this when he proposed his famous pathological theory of the *error loci;* and, like that theory, all others of the kind, in the history of medicine, have been among the least useful and least creditable of their respective authors' works. The excellent Boerhaave reasoned quite as logically from the facts then known as Dr. Alderson has done from the facts now known in the chemico-physiological constitution of the blood, and concerning the anatomical structure and arrangement of its containing vessels.

From the fact that, in cases of accute rheumatism, it has been ascertained that there is an increase of the fibrine and a diminution of the red corpuscles in the blood, Dr. Alderson assumes that these events maintain the relation of cause and effect; and, further, that this increase of the fibrine is the proximate cause of rheumatism. As similar deviations from its normal standard and relative proportions are observed in the blood in cases of simple inflammation, our author concludes that rheumatism differs nothing from the most simple inflammatory affection, excepting in its localization in the articular tissues; which accidental circumstance he attempts to account for, by supposing some impairment of the local vascular structures in the parts concerned, which impairment, or perhaps the abnormal plasticity of the blood itself, he conceives to be the proximate cause of the local stasis and inflammation. Then, reasoning backwards, he attempts to corroborate his theory by what he con-

siders to be "facts fully borne out and received" in the chemico-physiological metamorphosis of the fibrine, and the corpuscles of the circulating fluid, and it is upon *his* knowledge of these metamorphic changes, both normal and pathological, that he relies for the plausibility and strength of his argument. The value of this line of argument is indicated in the quotations we have given. In his second lecture, Dr. Alderson continues the argument thus begun. He says:

My position is, that the general priority of vulnerability would lie in the joints, supposing all the organs to be in a sound and equally developed state, and that no adventitious localizing agency were to give preference to another.

The essential distinctive feature which characterizes rheumatism being, as we have already said, the local affection of the joints, we will pursue the inquiry, how far the views suggested, as to the nature and cause of the local attack, are borne out in applying the same principle of explanation to all the symptoms and incidents of the disease. * * *

Relief from the intense pain, redness, and swelling, according to that explanation, may be considered as a necessary sequence of the *solution of the excess of fibrine, that solution having been fully effected by means of delay in the vessels*, and in consequence of the absence of a sufficient supply of oxygen to the blood so delayed. The average period of the arrival of relief from the attack of each locality has been, by general observation, fixed at about three days, and this takes place without any artificial assistance. This general self-adjustment of the balance falls in with our statement in regard to the natural curative process.

The period of duration of the fibrile symptoms, and of the corresponding presence of fibrine in excess, may, according to our supposition, be modified by the degree of self-relief which is afforded by the local affection. * * *

Another important circumstance has also been noticed, — that the more severe the symptoms are at the commencement of the attack, the sooner is the maximum point of excess of fibrine arrived at. * * * The increase up to a certain point, is to be explained by the accumulation which takes place in consequence of the fibrine not being used up at the periphery, and by the simultaneous process of its continued formation in the lungs. * * * In cases of relapse, the over-fibrinated state of the blood does not apparently rise gradually, but jumps up at once to a high point of excess, bearing still the same proportion to the febrile symptoms.

The extension of rheumatism beyond the joints now claims our consideration.

If the local attack, consisting in obstruction, subside before the general mass of the blood is restored to its natural state, and the excess of fibrine remain unchanged, the obstruction may then proceed to the same tissues in the chest, in which it has been localized in the joints, and the heart, and its coverings may become affected.

In his third and last lecture, Dr. Alderson offers the following sug-

gestions and illustrations, drawn from the results of the popular therapeutic treatment of rheumatism.

Perhaps rheumatism, under the assumption that the views which we have held out are correct, affords the best known instance of a disease in which *bleeding might be applied or withheld on solid principles.* A direct relief afforded to the pain in the joints may be referred to the consequent lessening of the heart's force; for whenever there is a stasis of the blood, then the impulse of the heart, forcing a further supply on the already gorged vessels, communicates a renewed pressure at every beat, occasioning most violent pain. A portion of the blood taken from the system, by lessening the whole quantity in the circulation, must relieve the pressure. A single bleeding, therefore, during excessive pain in the joints, is a practice for which we can assign a sufficient reason. The quantity should be moderate, and the act of venesection not repeated.

I am disposed to attribute some of the sudden cures ascribed to *colchicum* to the circumstance that the local affection usually disappears after a brief space, with or without the application of any remedy by the self-relieving process, which has been the foundation of nearly all our remarks.

The object sought, and perhaps obtained by the use of large quantities of vegetable acids, falls, in my opinion, far short of any really curative measure, since to oxidize the uric acid, which is only one *consequence* of the disease, can have but little effect upon the disease itself. We must, therefore, repeat that acids and alkalis are included in the same list of remedies, applicable more to effects than to causes; useful, it may be, as palliatives, but leaving the original disease unapproached. This is no less than an attempt to meet only particular trains of symptoms, to the disregard of all the primary and comprehensive characteristics of the disease, and then to offer to the notice of the profession those means so narrowly directed in the guise of general curative measures. * * *

The action to be ascribed to nitrate of potassa consists in the mechanical effect of endosmose along the canal, and its own free elimination by the kidneys, of which it certainly increases the secretion.

Bark, in promoting the vital functions, may act to invigorate those peripheral processes which are in defect, and to reinduce the employment for purposes of nutrition of that fibrine which exists in excess in the blood, and so help to dispose of the fibrine, and to restore to the blood a balance of its constituents. * * *

In the foregoing quotations, we have noted all the important points insisted on by our author, as essential to his argument and corroborative of his ingenious theory. Let us now briefly examine these several points in the reverse order of their statement.

The Argument from the Effect of Medicines.—Dr. Alderson has manifestly failed to present any positive evidence on this score in favor of his theory, though he has very boldly announced his opinion in reference to the *modus operandi* of certain medicines. In reference to the utility of *bark* and the mode of its operation in rheumatism, nothing very favorable

can be affirmed, though it is probable that, in certain cachectic cases, especially in malarious districts, it may be of essential service, but it is not known that it is by any effect on the blood. The tables of Dr. Haygarth, the great advocate of the use of cinchona in rheumatism, show the interesting fact that this plan of treatment produces very decided effects upon the brain and nervous system; for in 17 out of his 121 cases it produced symptoms of "phrenitis," and "*delirium.*" The blood may, in common with other portions of the animal organism, be affected secondarily through the influence of bark and analogous substances, by their agency upon the nervous system, but in accounting for the particular mode in which such curative effects are produced, it is as easy to guess one thing as another—all is conjectural. The summary manner in which Dr. Alderson sets aside the evidence of the curative effects of the whole class of acid and alkaline remedies, will by no means strengthen his argument with those who have witnessed the incontrovertible evidence of their curative agency when appropriately exhibited. Indeed there are stronger probabilities that the uric acid, &c., the elimination of which these remedies are so efficient in promoting, stands in a more strictly causative relation to rheumatism than any abnormal condition of the fibrine in the blood possibly can.

Concerning the beneficial effects of *blood-letting*, no one can rationally assert that it is primarily or principally by diminishing the dynamic force of the circulation that its remedial agency is effected; and the repeated analyses of blood in various diseases do not show that the beneficial effects of blood-letting are produced by virtue of any special or definite modification which venesection induces in the elemental constitution of the blood; and especially is it demonstrably evident that it is not by virtue of any effect produced upon the fibrine.

It is an admitted fact that all those remedial agencies applicable to the cure of rheumatism belong to the class of *diaphoretics*, or are included in that class of diuretics known as *antilithics*. But any argument in reference to the morbid processes of disease, based upon the results of therapeutical treatment, is manifestly of little importance, inasmuch as the special *modus operandi* of medicinal agents is, in most cases, quite as conjectural as are the abnormal processes and the morbific agencies which constitute or characterize any particular disease. Dr. Alderson's argument and theory must rest entirely upon the correctness of his statement and use of the facts observed in the chemico-physiological constitution of the blood, and in its pathological changes.

We have already remarked that the present infantile state of haematological science is entirely insufficient to furnish any reliable basis for general and sound pathological reasoning and theorizing; but, as our

author thinks differently, let us carefully examine into the validity and the relevancy of the facts which he has adduced in support of his theory, for he boldly affirms that his theory concerning rheumatism, and the pathological changes upon which it depends, "include nothing hypothetical."

First, in regard to the supposed liability to vascular obstruction in the articular tissues, we ask,—Is there anything in the nature of those structures, or in the mode of vascular supply to them, which indicates the pronèness to such obstruction and vascular stasis as Dr. Alderson insists upon? We simply know the facts stated by Mr. Leuekett, 1st, that in the tendons the number of vessels is very small, and that they run straight, and lie buried in the areolar tissue between the bundles of fibres; that in healthy adult articular cartilage there are *no vessels*, and that those vessels which do exist in fœtal cartilage are very small, and are contained in canals that are relatively large; and that the nutriment of the cartilage is derived from, 1st, a set of small vessels confined to the cancelli of the adjacent shaft of the bone; 2d, from a set of looped vessels belonging to the synovial membrane; lastly, the synovial membrane is supplied by looped blood-vessels, the regularity of whose arrangement renders them probably as little liable to obstruction as any blood-vessels in the body. And generally, so far as the vascular supply to the dense tissues is concerned, it is demonstrably certain that the mode of supply in the bony structures offers quite as great natural obstacles to the free circulation of the blood, under any abnormal conditions of that fluid, as do any of the articular structures; and that, from a common cause, viz., abnormal plasticity of the circulating fluid, we should usually, if not invariably, observe a coincidence of osseous and of articular inflammation. But such is not the case.

Aside from the argument, it may be safely asserted that to admit that because of a peculiarity in the normal structure of an important tissue in the human body, it is rendered constantly liable to painful and dangerous disease from so slight, so frequently recurring, and so uncontrollable a cause as is the fluctuating and relatively inconstant proportion of the fibrine in the blood, would be contrary to the evidence of all antecedents in the history of disease, and discordant with the testimony which physiology uniformly renders to the beneficence of the Creator.

Dr. Alderson teaches that it is the excess of fibrine in inflammatory blood which induces the stasis and coincident phenomena that characterize the local inflammation; and he further informs us that, until such stasis or arrest in the circulation occurs, the fibrine must continue to increase, because of the very effect of its presence in stimulating the heart, and through it the hyper-oxidizing or fibrinating processes in the lungs; but the occurrence of a stasis at the joints is not only the signal of

the recuperative and self-relieving process, but it is in itself absolutely essential to that process.

As this self-relieving process is the *sine qua non* of Dr. Alderson's whole argument, we may be excused from accepting any portion of his theory if this process is not clearly demonstrated. He argues that preceding and accompanying the stasis, there must have been a stoppage of the processes of nutrition in the affected part, and in the peripheral circulation generally, and that consequently there must occur an increase of fibrine from this arrest of nutrition. The "catastrophe of obstruction" occurs as the first event in the "renovating process." "The solution of the fibrine, *therefore*, proceeds in that quantity of blood which is delayed and accumulated in the locality of the joint, and tends to restore the balance towards the normal proportion in that quantity of delayed blood," &c. (*Lect.* i, p. 35.) Dr. Alderson acknowledges that this self-relieving or purifying process constitutes the foundation of his theory, (*Lect.* iii, p. 96); it will be observed, therefore, that this supposed event of the solution or melting of the fibrine contained in the stagnant blood about the affected joints, constitutes the keystone of the whole argument. What, then, does our author mean by the term "dissolving of fibrine?" From the use he makes of the term, and from the fact that the fibrine in the blood is always in a state of solution unless coagulated, we infer that he would have us understand that the fibrine delayed at the point of stasis, undergoes some catalytic or perhaps an elemental transformation,—perhaps into its antecedent state of albumen, or into new elemental compounds. Surely there is no possible evidence that such transformations ever do occur in stagnant blood; on the contrary, there is direct proof that where a complete stasis of the blood occurs in any portion of the circulatory tract, the fibrine may and often does become sufficiently organized to constitute a permanent plug, as in the case of local coagula observed in aneurisms, obliteration of the veins, phlebitis, &c.; and as it regards the possible transformation of the fibrine into other elemental compounds, nothing is known. Even if we accept that beautiful theory proposed by Prof. Lehmann, viz., that the fibrine of the blood serves both in the progressive and in the regressive metamorphoses of the tissues, it cannot serve the purpose proposed in Dr. Alderson's theory. But it is hardly probable that our author supposed even any explanation of his use of the term "dissolved fibrine;" for the ease with which he constructs any hypothesis that may serve in his argument manifests his lack of consideration. This hypothesis is first brought in to meet the objection which Henlé urges against the mechanical theory of rheumatism, and subsequently it is made to serve as many purposes as it may.

The Formation and Increase of the Fibrine, and its Relation to the Blood Corpuscles.—It has not yet been satisfactorily proved that the fibrine of the blood is generated by the agency of oxygen. Andral and Gavarrett found the highest mean for fibrine in their analyses of diseased blood, in cases of pneumonia, a disease which precludes in the highest degree the natural access of oxygen to the circulating fluid. Concerning this supposed agency of oxygen in the formation of fibrine, Lehmann remarks, that "physiological facts lead us to exactly the opposite hypothesis that the augmentation of the fibrine in inflammatory blood is to be referred to a diminution in the supply of oxygen."*

The idea that the fibrine of the blood is formed by the oxidation or consumption of the blood-corpuscles has of late been a favorite hypothesis with some speculative writers, but it is not supported by facts or legitimate inferences. Lehmann remarks, that "*the number of red blood-cells* is decreased during the fibrile inflammatory process, although not to any very great degree, unless the existence of other pathological processes has induced a simultaneous diminution of the whole mass of the blood-cells. In some cases scarcely any diminution of the blood-cells can be observed, although there may be a considerable increase of the fibrine." And he asserts further, "that the increase of this substance is independent of the condition of the patient as to strength, *and unconnected with the increase or decrease of the other solid constituents of the blood.*"† In the following table which we have arranged, this general fact is indicated.

Andral and Gavarrett:

	Solid-residue.	Fibrine.	Blood-corpuscles.
Healthy blood,	210.0	3.0	127.0
Analyses:			
Mean of 43 analyses,			
" in 43 cases of acute rheumatism,	194.6	6.7	101.0
" in 10 cases of chronic do.,	217.3	3.8	108.2
" in 58 cases of pneumonia,	201.0	7.3	114.1
" in 8 cases of erysipelas,	193.2	5.7	99.1

We have now traced back our author's argument to its first propositions, and although the whole theory is ingeniously devised, it is manifestly unsupported by facts. Dr. Alderson has chosen to occupy a field that has been often traversed by speculative pathologists, none of whose theories have long outlived their authors. But Dr. A's lectures will be extensively read, for he has pursued a course of hæmato-patho-

* Op. Cit. vol. 1, p. 361. † Op. Cit. vol. II, p. 262.

logical reasoning and generalization at once attractive and popular, and which the medical press has lauded as "improvement in the right direction."

Dr. Fuller's treatise, which we will now proceed to examine, presents a striking contrast with Dr. Alderson's lectures. It is a simple and perspicuous arrangement and epitome of the facts and events observed in the history of rheumatism and its allied affections; and it is certainly a very complete and able *resumé* of the whole subject, altogether the best of any treatise in the English language. The author attempts the establishment of no theory, but with commendable research has labored to present a full history of his subject. In his introduction he makes some comments upon the current pathological theories, and the causes and nature of rheumatism. After carefully considering the supposed relation of rheumatism to the effects of cold, he remarks, "It will be observed that the phenomena produced by cold are totally unlike the symptoms of rheumatism. No wandering pains, no redness or swellings of the joints; no symptoms, indeed, of any moment, present themselves, unless the cold be intense, and even then they bear no resemblance to the symptoms of rheumatism. Nay, more than this, the experience of travellers has proved, beyond all question, that, in healthy persons, the most extreme and rapid variations of temperature are insufficient to excite the disease." This remark he fully corroborates by references to the testimony of Capt. Parry, in his Arctic Voyages; Sir F. Mitchell, in his Tropical Expeditions, and Larrey's Memoirs of Military Surgery, and the records of British Military Hospitals, &c. He further remarks that, "it needs little observation to prove that cold and atmospheric vicissitudes are not essential to the production of rheumatism. Persons in private life are frequently seized with active symptoms of the disease, without having been subjected to the slightest exposure; and, in hospital practice, patients who have been admitted for some other complaint, and have been confined to bed for weeks in a ward heated 65° Fahrenheit, are sometimes attacked by it in a most violent manner. In such instances the symptoms are just as severe, and continue just as obstinately, as in cases where there has been the greatest exposure." After stating the leading points in the argument in favor of the doctrine of vitiated condition of the blood as the proximate cause of rheumatism, Dr. Fuller remarks, that "the poison which is to produce a regular and determined disorder like acute rheumatism, must be invariably the same, must be in itself peculiar, specific, as giving rise to a specific affection."

In his second chapter, Dr. Fuller discusses the question of the hereditary character of rheumatism. He asserts that "rheumatism, like gout, is distinctly hereditary. From father to son its seeds are transmitted, and bear fruit in exact proportion to the degree in which circumstances may prove favorable to their growth. * * * Circumstances not unfrequently concur to render our efforts to trace its hereditary character difficult, and often to make them unavailing, yet we cannot but feel surprised at the large number of cases in which its existence can be clearly ascertained. The records of the Consumption Hospital exhibit the operation of an inherited predisposition in little more than 24 per cent. of the cases there admitted; and the annals of insanity supply data to prove that its influence obtains in less than 13 per cent. among the inmates of lunatic asylums; whereas, among the rheumatic patients admitted into St. George's Hospital, I have traced it in nearly 29 per cent.; and M. Chomel distinctly ascertained it in half the cases admitted into the Hôtel Dieu."

In reference to the relative liability of the sexes, Dr. Fuller presents the following facts from the records of St. George's and St. Thomas's Hospitals:

Total number of cases of rheumatism,	-	2049
" " "	males,	-	-	1410
" " "	females,	-		639

And, from a record of 425 cases of acute rheumatism, it appears that 226, or about 53 per cent., were males.

Concerning the influence of climate and season, Dr. Fuller remarks that "it is not in the most inclement seasons, nor in the coldest climates, that rheumatism is the most prevalent, but at those seasons and in those climates remarkable for damp and variable weather. The disease occurs less frequently in the frosty month of December, than in the warmer but relaxing weather of May, and it is not so prevalent in the cold climate of Nova Scotia and New Brunswick, as at the Cape of Good Hope, the land of heaths and geraniums."

In reference to the predilection of the rheumatic poison for the fibrous and fibro-serous textures, our author makes the following interesting suggestion: "It is worthy of note, that the textures most commonly implicated in rheumatism, are all examples of the albuminous and gelatinous tissues, from the decomposition of which, in the wear and tear of the body, are formed those secondary organic compounds, the lithic and lactic acids, with which gout and rheumatism are intimately connected. And as it is but consistent with our knowledge, respecting the processes of nutrition and assimilation, to suppose that each tissue selects

from the blood and appropriates to itself such matters as correspond with it in chemical constitution, we may readily conceive that some peculiar attraction may be exerted by the fibrous and fibro-serous textures for compounds, such as the lithic and lactic acids, to which they have so strong an affinity."

Dr. Alderson has criticized Dr. Fuller's suggestions concerning the nature and causes of rheumatism, and asserts that it is precisely "the same idea and nothing further," as that which was proposed by Paulus Ægineta; but we think this criticism as unfair as it is untrue, for the comparison is based upon the following vague remark of that ancient author,—"An unnatural humor and the feebleness of parts produce the disease." Dr. Fuller devotes seven chapters of his treatise to the consideration of acute rheumatism, or rheumatic fever, with its various and important complications and consequences. His chapters on rheumatic affections of the heart are enriched with valuable statistical researches, and with extended and judicious remarks upon the subject of treatment, based upon actual results, as witnessed at St. George's Hospital.

In reference to the phenomena of acute rheumatism, Dr. Alderson attributes great importance to the acid perspirations, which are so strikingly characteristic of this disease; and he states it as his opinion that—

The materies morbi is in a great measure got rid of, and the natural cure of the disease effected by means of these profuse sour-smelling perspirations; and unless they be replaced, as they sometimes are, by diarrhœa, diuresis, or extremely acid vomiting, everything which tends to check them, tends also to prevent the elimination of the poison, and so indefinitely to protract the disease. In the wards of St. George's Hospital I have had repeated opportunities of noting this fact, and have frequently begged the pupils to observe that the cases of rheumatic fever which have progressed most favorably, which, though severe in their local and general symptoms, have run their course in a fortnight or three weeks, and have left the patient free from pain, have been those accompanied by profuse acid perspirations; whilst those which, in spite of medical treatment, have lingered on for a period of six or eight weeks, have been those in which the sweating has been less strongly acid, less perfect in its development, and less constant in its continuance. * * Though the characteristic acid, sour-smelling perspirations, which occur in the natural course of the disease, are unquestionably highly beneficial to the patient, as is shown by the increased severity of the symptoms which results whenever they are forcibly arrested, those certainly are not so which are met with in debilitated and cachectic states of the constitution; which occur after the incautious use of the vapour bath, or depletion carried to an unwarrantable extent; or which are sometimes witnessed towards the close of protracted cases. Such perspirations are useless, wasting, and enfeebling. * * * The former are essential to the safety of the patient; the latter are in a great measure the effect of

debility, are enfeebling and pernicious in their continuance, and can and ought to be arrested.

In reference to the period of duration of an attack of simple acute rheumatism, Dr. Fuller presents the following facts and suggestions:

During the four years ending Dec. 31st, 1848, there were admitted and treated in St. George's Hospital 289 cases of acute rheumatism, and the average length of time they remained in the Hospital was 35 days. And the author states that his observations on this point in the Hôtel Dieu, and at Addenbrooke's Hospital, very nearly correspond with the period observed at St. George's; but he adds, "experience, however, has taught me to believe that remedial agents are capable of still further shortening its duration; and to such an extent does this hold good, that, as I hope to show, the average duration of our uncomplicated attack, may be reduced by judicious treatment, from a month or five weeks, to ten days or a fortnight.

As to the question whether acute rheumatism may not be immediately arrested by treatment, our author shows that the uniform testimony of the best experience is opposed to the pleasant theory of those physicians who have claimed, for some special and exclusive mode of treatment, the superior merit of at once arresting the disease. He admits that—

Doubtless instances are occasionally met with, in which the disease subsides almost immediately under treatment, but such examples are rare, and in my observation have occurred indifferently under all kinds of treatment. The favorable result is referable probably to some change induced in the functions of assimilation, by agencies altogether beyond our ken, and it occurs so seldom, that it cannot be fairly cited as indicating the possession of a power to arrest or cut short the disease.

The chapter on the treatment of acute articular rheumatism gives a candid and instructive view of the various modes usually pursued, with general results. The author remarks that:

It is obvious, that no sound inference can be drawn as to the success of any particular method of treatment, unless such treatment has been largely adopted, and has been attended with tolerably uniform results. And I am sure I may say, without fear of contradiction, that each and every plan of treatment which has been hitherto proposed, is regarded by the profession as unsatisfactory, yet it is far less the discovery of any new medicines, than the adaptation of our present remedies to the exigencies. By what means, then, can we best effect our purpose, and to what extent is it prudent to employ those means? If the materies morbi be indeed an acid, or an acidulous compound; if it be lactic acid, for instance, as there are cogent reasons for believing it to be, then will its neutralization be effected, its irritative property probably diminished, and its elimination promoted

by a free exhibition of alkalis and neutral salts; and these objects may be further advanced by the administration of purgatives, sudorifics, and diuretics to act upon the various excretions. Such is the rationale of the treatment to be adopted. Where the objects to be accomplished are fairly understood, the means of attaining them will be obvious to every one conversant with medicine; and the question to be decided is not so much what remedies should be employed, as in what quantities and under what circumstances each remedy should be made use of.

It will be gathered from what has been already stated, that my chief objection to many of the expedients which have been resorted to for the care of rheumatism lies not so much against the remedies themselves, as against the mode in which they have been employed. Each remedy or class of remedies has been two exclusively relied upon. The treatment to which I have recourse at the outset of the attack is made up of alkalis and the neutral salts, with colchicum, calomel, and opium. Sometimes a little antimony is added, sometimes the aid of purgatives is had recourse to, and sometimes, though rarely, I deem it expedient to premise a moderate blood-letting. Baths are never employed if the skin is acting freely; but, instead of being bathed in perspiration, it remains dry and hot, and burning. I then endeavor to stimulate its action by means of the vapour or the hot-air bath.

Dr. Fuller considers that the free use of calomel and other active purgatives is objectionable, even when exhibited as recommended by Dr. Hope. Opium he gives in full and sedative doses to alleviate the pain, and during the administration of alkalies he continues the use of this drug so far as may be necessary to restrain the action of salts upon the bowels. Nitrate of potassa, and sodæ potassio-tartratis are the salts upon which he mainly relies for curative effects. In addition to internal medication, he places much reliance upon external topical applications in the form of alkaline fomentations.

Upon the whole, we can discover no essential difference between the plan of treatment pursued by our author, and that which is resorted to by the best practitioners among us. Though Dr. Fuller is not satisfied that lemon juice is an efficient curative agent in rheumatism, he has suggested the probable reason of its repeated failures, to meet the indications for which it is exhibited in such cases. In only three of the twenty-two patients to whom he administered lemon juice, did this treatment "appear to afford relief or to hasten recovery."

In the three instances alluded to, it was taken in full doses, viz., eight ounces in the twenty-four hours, and was not only tolerated, but, as far as I could judge, *was speedily converted or assimilated in the stomach;* and its influence in quieting the heart's action, in promoting a free evacuation from the kidneys, and in causing subsidence of the articular inflammation, was very marked. But in most cases it did *not* appear to be readily converted in the stomach, as was evidenced by the length of time which elapsed before the patient became free from its flavor; and

this may, perhaps, account for its frequent failures in alleviating the symptoms of the disease.

Dr. Fuller details several cases in which the plan of treatment he pursued gives good proof of its value; for, in the 1st case, the articular inflammation subsided altogether within 48 hours; in the 2d case, on the third day; in the 3d case, on the fourth day; in the 4th case, on the second day; in the 5th case, on the fourth day; in the 6th case, on the fifth day. On analyzing 39 cases, which he had treated after the plan detailed in his treatise, he remarks that he found that seven were accompanied by symptoms of endocardial or exocardial inflammation; but that, in only two cases, did such symptoms manifest themselves after the commencement of treatment, and that before the full effect of remedies could be felt.

Dr. Fuller devotes his sixth chapter to the consideration of *The Causes of Rheumatic Affection of the Heart*, and he has very lucidly and explicitly stated the main points in the pathological argument by which it is demonstrated that rheumatic inflammation of the heart occurs as a mere coincidence, and an extension of the local manifestations of the general disease; and that valvular inflammation and fibrinous accretions, though often coexisting phenomena, are yet essentially independent of one another. Though rheumatic affections of the heart may, and do sometimes, occur without any attack of articular inflammation, Dr. Fuller's observations pretty satisfactorily establish the fact that, when the heart becomes affected in connection with articular rheumatism, it is in the great majority of instances in those cases in which there is the highest degree of febrile and inflammatory action. He says:

Wherever I have met it, (pericarditis,) even though the articular rheumatism may have been slight or evanescent, the febrile disturbance has always been severe, and accompanied by profuse and sour-smelling perspiration. As many as 114 out of the 130 cases of recent heart affection, observed among the rheumatic patients admitted into St. George's Hospital during the time I held the office of registrar, occurred in the acute form of the disease; and taking pericarditis alone, 39 cases were noted among the class of acute rheumatism, and 2 only among the subacute; the number of patients in the respective classes being 246 and 133. In other words, these cases show that, whereas pericarditis occurs once in about every 6.3 patients suffering from *acute* rheumatism, it does not accompany above one in every 66.5 cases of the subacute form.

* * * In many instances the heart remains unaffected throughout the attack, and though it does sometimes suffer, even in the milder cases, it is most commonly damaged in those instances which are marked by unusual severity of their general symptoms, by the number and intensity of the articular inflammations, and by the rapidity and frequency of their migration. * * * The next question to be decided is, in what cases and

under what circumstances the heart's irritability is greatest, and whether it is in such that the risk of inflammation in that organ is most imminent? It is notorious that, in youth, the heart's action is not only quicker than in more advanced life, but that it is also much more readily accelerated. In women in like manner, &c. * * * in those persons who have been weakened by illness, or by large and repeated blood-lettings, &c. * * * I have always been struck, both in private practice and in the wards of St. George's Hospital, by the frequency of its occurrence in the pale and weakly, and in those who have been reduced by previous illness, or exhausted by the treatment adopted, and, *cæteris paribus*, in those in whom the heart's action is particularly accelerated. * * * Respecting fibrinous deposition on the valves, the following is the view I have been led to adopt:—It is due to the presence of an unusual quantity of fibrine in the blood, and to the weak state of solution in which it is held, probably in consequence of the extreme acidity of the system: it is essentially independent of valvular inflammation, and may or may not occur coincidently with it: the probability of its occurrence, however, is greatly increased by the existence of active valvular inflammation, inasmuch as the slightest roughness or unevenness on a valve, such as would be likely to arise from inflammation, would form a nucleus for the deposit of fibrine, and would thereby favor the tendency to its deposition. * * * It takes place on the valves in preference to other parts of the heart, partly in consequence of the extreme susceptibility to the irritation of the rheumatic poison exhibited by the fibrous tissue which enters into their composition; partly in consequence of the excited state in which they are kept by their unusually frequent and forcible contact with each other.

The chapter on the *Symptoms and Progress, and the Pathological Effects of Rheumatic Inflammation of the Heart*, gives a full and satisfactory view of the subject; and it is elucidated by the history of all the *fatal* cases of acute rheumatism occurring in St. George's Hospital during the six years ending with 1850.

Dr. Fuller believes that the pericardium is very seldom restored to the condition of perfect health, after pericarditis with effusion of lymph; yet he admits that there is no *a priori* impossibility in the reabsorption of the lymph in such cases, at least to the extent described by Mr. Paget in Vol. XXIII. *Med. Chirurg. Trans.* "But," he says, "in ordinary cases, when extensive pericarditis occurs in healthy persons, a large quantity of highly plastic lymph is poured out, and then so rapidly does adhesion take place, and organization of the plastic medium commence, that I look upon its complete absorption as next to impossible."

We think Dr. Fuller has stated this point too strongly, for we are warranted in believing that when this subject shall have been thoroughly investigated, it will be ascertained that the number of cases in which perfect health is restored after such effusion of lymph, is really very

large. Dr. Kirkes* has shown that adhesion of the pericardium is a comparatively rare event in cases of pericarditis; and it is now conceded that the fibrine of lymph is subject to processes of degeneration *by which it is probably fitted for absorption.* Says Dr. Paget, in his *Lectures on Surgical Pathology*, vol. 1, p. 374; "The fibrine of lymph is subject to a degeneration which we may compare in many respects with fatty degeneration, or, more closely, with the changes by which lymph-corpuscles are transformed into those of pus." The fatty and liquefactive degenerations bring such lymph into a state favorable to its absorption. Dr. Paget remarks that "such degeneration of the fibrine-products of inflammation brings them into a state more favorable for absorption; indeed, one may see in lymph thus changed many things which, in regard to the fitness for absorption, make it parallel with chyle."

In reference to the peculiar fremissement or thrill communicated to the chest, and from the chest to the hand, when placed over the precordial region, a symptom which is occasionally observed in cases of pericarditis, Dr. Fuller states that "in every case accompanied by this thrill, in which I have had an opportunity of examining the conditions of the parts after death, the outer layer of the pericardium has been found glued, as it were, to the parieties of the chest by lymph effused into the anterior mediastinum." Dr. Hope, Dr. Watson and others, have mentioned the occasional occurrence of this vibratory thrill, but Dr. Fuller has certainly presented the first satisfactory explanation of its cause which we recollect to have met with.

Dr. Fuller gives the history of all the cases of acute rheumatism which proved fatal in St. George's Hospital during the six years ending January, 1851, by which it appears that the whole number of fatal cases was 16; males, 8; females, 8; seven of the cases occurred in persons between the ages of 15 and 20 years. In all of the cases there were found evidences of pericarditis; and in 10, there was more or less valvular disease, or evidences of endocardial inflammation.

Treatment of Rheumatic Inflammation of the Heart.—In reference to this subject, our author considers that much that has been taught, and some of the most popular modes of practice, are essentially erroneous and injurious. He remarks concerning the use of mercury:

It has been asserted, that by putting the system under the influence of mercury, it is possible to ward off cardiac inflammation. No statement, however, can be more erroneous, or more mischievous: erroneous, because pericarditis is frequently set up whilst the system is fully under the influence of mercury; mischievous, because ptyalism forms a grievous

* *London Medical Gazette*, April, 1849.

addition to the miseries of the disease, very frequently causes excessive depression, and thus tends to give an unhealthy character to the inflammatory products, and because by its presence we are deprived of a remedy which, administered in due season, and with proper regard to the exigencies of the case, proves most valuable in promoting those actions whereby the extent of the mischief is limited, and absorption of the inflammatory products induced. * * * In five instances I have seen acute pericarditis supervene at a time when the patent was profusely salivated, and in every case the ptyalism appeared to operate prejudicially.

Of blood-letting, he remarks:

It certainly is not necessary for the cure of the disease, as I have myself effected many cures without it; it is not productive of safety to the patient, for M. Bouillaud lost six out of eighteen patients attacked by the disease; whereas, out of forty-seven cases, of which I have notes, in which it was not employed, only one proved fatal, and this was a case of pericarditis, which occurred in a weak, debilitated person, and was complicated by extensive inflammation of the pleura. * * * General blood-letting then should be employed in rheumatic carditis, under precisely the same circumstances as in cases of acute rheumatism uncomplicated by cardiac inflammation. As a remedy too exclusively relied upon, it is quite unavailing, and often extremely dangerous: as an expedient to be employed in aid of other remedies, it is occasionally of the greatest service. * * * But in ordinary cases it is unnecessary, and therefore inexpedient.

Local blood-letting by leeches and cups is of course recommended. A rational use of mercury and of opium is also strongly insisted upon.

Dr. Fuller devotes the ninth chapter of his treatise to the *Statistics of Heart Disease in connection with Rheumatism.* His tables and inferences are based upon the history of 379 cases of rheumatism, being all the cases of this disease admitted into St. George's Hospital from January, 1845, to May, 1848. The number of cases of acute rheumatism was 246; of subacute, 133. The heart was found healthy in 160 instances; in 32, there was no note of its condition, but probably healthy; and in 187 cases it was diseased. Of the 187 cases, 130 were examples of recent mischief; in 39 the disease was of old standing; in 18, doubtful. In other words, there existed in about half the cases of rheumatism some form of cardiac disease; some recent mischief in more than one-third; and some old-standing mischief in one-eighth of the cases.

Of the cases of recent cardiac disease, 114 of the 130 cases occurred in acute rheumatism, as did also 10 of the doubtful cases, and 21 of the cases of old-standing disease. Among the 133 cases of sub-acute rheumatism there were but 42 instances of cardiac disease,—20 being of recent origin, and 22 of old standing. Pericarditis occurred in 1 in every 6.3 of the whole number of cases of rheumatism, and endocardial mischief in 1 in every 2.3, there being 39 cases of pericarditis to 107 of endocardial mischief.

This chapter of *Statistics* is replete with interesting facts concerning the history of rheumatic affections of the heart; and it should be read in connection with those highly interesting papers of Dr. Barclay, the present registrar of St. George's Hospital. (*Med. Chirurg. Trans.*, vols. xxxi & xxxv.) Dr. Barclay has taken up the same line of examination as that pursued by his predecessor, Dr. Fuller, and he has extended his investigations in reference to valvular disease in particular, and its relations to albuminuria and organic affections of the kidney, as well as to its dependence upon rheumatic inflammation; and he has shown that, in a majority of the instances of valvular lesion coming under his observation, the causes of the disease were positively non-rheumatic; and further, that in a ratio nearly or quite as large as he observed in cases of rheumatic origin, he found the valvular lesion associated with albuminuria and important renal disease. At the same time, Dr. Barclay has shown that the majority of cases of adherent pericardium occur among persons who have never suffered from rheumatism at all. The origin and history of these non-rheumatic cases of cardiac lesion demand the attention of our profession, for the consequences of this form of cardiac disease are as disastrous as in that class of cases which are of rheumatic origin.

But we must omit further discussion of this topic, and proceed in our examination of the remaining chapters of Dr. Fuller's treatise. His tenth chapter is devoted to the subject of affections of the brain, inflammation of the lungs, and pleura and disorganization of the joints. These events our author believes to be dependent upon the diseased or poisoned nature of the blood in rheumatism. The gravity of these complications of rheumatism renders this subject worthy of special attention, and it presents a field for study in which some new truth is yet to be found. That a poisoned condition of the blood, when it is loaded with urea, or its proximate elements and compounds, is competent to the production of all the cerebral disturbance witnessed in cases of rheumatism, there can be no doubt; but it may be that in a certain proportion of instances, the cause of a fatal termination may yet be found to be from the detachment of fibrinous deposits from the interior of the heart, and their mixture with the circulating blood. Dr. Kirkes,* of St. Bartholomew's Hospital, London, has shown that when such detachments, or even a gradual disintegration of these fibrinous accretions does occur, very grave if not fatal symptoms may be the result; and this gentleman details several cases illustrating the mode in which death is effected in such instances. When detached from the aortic and mitral valves, these particles or masses are

* Med. Chirurg. Transact., vol. xxxv.

necessarily propelled into the systemic arteries and capillaries, where they may be arrested, and thus produce disastrous obstruction and derangement in the brain, kidneys, &c.; on the other hand, the result of such detachments or disintegration, occurring from the pulmonary or tricuspid valves, will be to induce disease in the lungs. Whether the fibrinous deposits or obstructions which occur in these important organs are primary or secondary in their origin, the consequences must be equally grave.

Rheumatic Gout.—The consideration of this important form of disease constitutes a truly interesting chapter in Dr. Fuller's work. He remarks that—

The natural history of rheumatic gout accords but little with that of true rheumatism, and is equally inconsistent with that of true gout. It differs from rheumatism in the frequency of its attacks, and the increase exhibited at each recurrence in the severity and obstinacy of its symptoms; in invading the small joints in preference to the large; in being more stationary, and often causing permanent enlargement; in rarely involving the heart or its membranes; and in sometimes producing desquamation of the skin. In all these particulars it strikingly exhibits a gouty nature. But it is unlike gout, in numbering among its victims the young, the middle-aged, the slender, and the weakly; in attacking women as frequently as men; in invading several joints simultaneously; and in being very migratory in its local symptoms. In all these points its rheumatic nature is strongly marked.

The term *rheumatic gout* is certainly more expressive of the nature of the disease than is the term used by Dr. Todd, viz., *chronic rheumatism of the joints;* or than that of *capsular rheumatism*, used by Dr. Macleod. The following are some of the more important characteristics of the disease:

In its acute, and apparently most terrible form, it may be readily confounded with acute rheumatism; but, when carefully examined, its history, symptoms, progress, and terminations, all serve to illustrate its distinctive character. Referable without a doubt to some constitutional peculiarity closely connected with peronted assimilation, it selects as its victims either the weakly and unhealthy, in whom the natural excretions are imperfect and deficient, or else fixes upon those who, though usually robust, have been subjected to some cause of mental or bodily depression. It attacks the girl just arriving at puberty, in whom the uterine functions are ill-performed; it invades the stiffening articulations of the woman who has just arrived at that time of life which is marked by the cessation of the monthly periods; it shows itself during the state of debility which follows a miscarriage, or a difficult and protracted labor, more especially when the labor has been accompanied by flooding; it is a frequent attendant upon renal disease, and a common sequel of over-long suckling, of excessive venery, of severe and long-continued mental exercise, and of mental distress and bodily exhaustion. Neither age nor sex affords

immunity from its invasion, but most commonly it shows itself from the age of thirty-five onwards; and its earliest attacks are usually seen in girls whose uterine functions are suspended or ill-performed. * * *

The form and the situation of the articular swellings present well-marked peculiarities. Whereas the larger joints most commonly suffer in true rheumatism, the small joints of the hands are the parts most frequently affected in this disease; and when the knees, or other large articulations are attacked, the character of the swelling is peculiar and diagnostic. It is more circumscribed than articular swelling of acute rheumatism, and its form and character indicate the existence of effusion within the joint rather than into the surrounding structures. * * *

Nor are the differences confined to the points already specified; they are strikingly marked in the nature of its complications. It is unaccompanied by the frightful heart disease which proves so fatal in acute rheumatism; but it has for its attendants inflammations of the eye, the pleura, and the brain.

Dr. Fuller goes into a careful examination of this disease as affecting the structure of the articulating tissues; particularly in reference to the nature and the symptoms of the deposits which occur upon and within those structures. This is a subject upon which every physician should be thoroughly posted; for, whenever any of the more important and deep-seated joints become affected, any important error or delay in diagnosis and treatment may prove disastrous to the welfare of the patient, as well as discreditable to professional character—as the thousands of unfortunate and irremediably crippled beings who have suffered this insidious disease, bear testimony by their stiffened and grating joints, and their halting motions,—and unfortunate to professional character, as is testified by a multitude who have become the willing victims of charlatanry, and by accident or necessity have fallen upon the very regimen and natural means which most efficiently relieve the disease in its more chronic forms.

In reference to the subject of treatment, Dr. Fuller says that:

The treatment required in the acute form of rheumatic gout, differs little from that of rheumatism, except that, from the character of the persons attacked, it need seldom be actively antiphlogistic, and from the inflammation of the joints being more stationary and the danger of structural disorganization greater, there is more necessity for the application of leeches, blisters and fomentations to the inflamed parts. Colchicum and alkalis are as necessary here as in genuine rheumatism, and as the chylopoietic viscera are generally sluggish, and the secretions much deranged, energetic medical interference is needed to restore them to a healthy condition. But in the administration of remedies, the greatest care should be taken not to depress the system unnecessarily; if, in genuine rheumatism, this caution is needful, much more so is it here where the disease occurs in the weakly or cochectic, and exhibits a remarkable tendency to pass into a chronic form. Whether mercury and purgatives, or

colchicum be employed, care must be taken so to administer the medicines as to remedy defective secretion, eliminate the poison, and restore a healthy state of assimilation, without lowering the patient, and exhausting his strength. Cases which prove intractable by alkalis, colchicum, and mercury, yield readily to their influence after the febrile action has been subdued, &c. In most instances the early and assiduous employment of appropriate fomentations will prevent the occurrence of articular mischief, and obviate the necessity for more active local remedies. If, directly inflammation of a joint is set up, that joint be kept at rest and constantly bathed in a warm solution of potash and opium, I am satisfied, from repeated observation, that no other topical application will be needed.

Dr. Fuller also strongly recommends the use of general alkaline baths as recommended by Dr. Wright, of Birmingham. Indeed, in a large proportion of cases, general bathing and friction are highly important agencies, and where there is much lack of tone in the system, especially in the younger sufferers from rheumatic gout, Dr. Fuller asserts that he knows of no single remedy so generally efficacious as the cautious use of the shower-bath. The vapour-bath, in like manner, is useful in that class of cases of long-standing in which the shower-bath may not be safely resorted to. For that large class of sufferers who are tormented by rheumatic gout in a chronic form, Nature has provided most efficient restorative agencies in the thermal and alkaline springs; of which Dr. Fuller considers those of Bath the most valuable. He has given tables exhibiting the temperature and constituents of the more noted springs in Europe. The temperature of the Bath waters is from 117°—109°; and they contain a large proportion of alkaline carbonates and sulphates.

Chronic Rheumatism.—On this subject we have room only for a few quotations in reference to the manner of treatment.

Hydrochlorate of ammonia is a remedy of singular efficacy in chronic rheumatism, yet, strange to say, is almost unknown as such to the profession. In no treatise on rheumatism, which I have had an opportunity of consulting, do I find the slightest notice of its virtues. Yet its action on the skin is admitted by those who have watched the effect of its internal administration. Certain it is, that in fifteen or twenty grain doses, in combination with bark, it sometimes produces marvellously good results, and is frequently serviceable when other remedies have proved inefficient. The character of the secretions improve under its influence, the skin acts more freely and regularly, and the disease gradually subsides. Its beneficial effects, however, are most remarkably exerted in muscular rheumatism; and when the periostium or the joints are affected, it seldom affords as much assistance.

We can bear decided testimony to the efficacy of this cheap drug, in the class of diseases above referred to. In our practice in the City

Dispensary for several years past, we have been in the habit of relying mainly upon this article in the treatment of the multitudes of cases applying for the relief of muscular rheumatism; and the results have been highly satisfactory.

Concerning topical applications, fomentations, &c., Dr. Fuller observes that—

Nothing proves more serviceable in old-standing, painful affections of the joints, than warm opiate fomentations; and not unfrequently liniments or embrocations prove equally beneficial. * * A liniment, composed of a drachm of the essential oil of bitter almonds, and fifteen drachms of almond oil, may be used with greatest benefit. * * * More than once, pains which had resisted all other remedies have yielded readily under its soothing influence.

The last chapter of Dr. Fuller's treatise is devoted to sciatica, and other forms of neuralgic rheumatism, and a valuable chapter it will prove to every physician who hitherto may have been foiled in his treatment of this interesting class of cases. But as our limits forbid further quotations, we will here close our examination of Dr. Fuller's excellent treatise, hoping that soon it will be presented to our readers entire and in an American dress; for we consider it altogether the most complete and luminous exposition of the history, characteristics, and the philosophy of treatment of rheumatic affections, that has yet been published in the English language. Though in some respects our author might have written more concisely, he certainly could not have written more carefully, nor have reasoned more candidly. His treatise is pre-eminently practical, and it must prove of great value to the mass of practitioners. The carefully collated statistics which are incorporated in the work, are exceedingly valuable, and they constitute the basis of many important suggestions and conclusions; while the suggestions and statements in reference to treatment, are highly judicious and instructive. Yet, upon the subject of therapeutical indications, the philosophy of cure, and the modus operandi of remedies, Dr. Fuller might profitably have made bolder reference to the great truths of iatro-chemistry and physiology, especially as relates to the depuriation of the blood by chemical agents.

Perhaps no writer has contributed more to the science of rational therapeutics, than the author whose last publication is mentioned at the head of this article. The rigid and scientific character of Dr. Golding Bird's extended researches into the nature of curative processes, and the modus operandi of medicinal and eliminative agents, entitle him to a high prominence among those who have laboured for the establishment

of a rational therapea, as relates to the department to which he has been specially devoted.

In the preface to this last edition of his treatise, Dr. Bird makes the following statement:

The subject of a more rational and philosophical system of therapeutics, one more consistent with an inductive plan of inquiry than we at present possess, has for many years been with me a cherished idea, and I had hoped to have been permitted to have contributed something to the common stock of knowledge on this subject, one of the most important in its bearings on our mission of alleviating the distresses of sickness, and of combating the effects of disease.

But, with pain, we learn that this excellent man and earnest lover of science, has but little prospect of completing the great undertaking he had projected, as he has recently been called to suffer severe and protracted illness. In the last paragraph of his book, he says:

Having thus explained my reasons for believing in the existence of an important class of remedies, the renal depuriants, capable of replacing with advantage in many cases mercurial alteratives, I dare not trespass further, as the very introduction of this chapter demands an apology, &c. * * * The only excuse I can offer is the unwillingness that the results of some very tedious and protracted, but I hope not useless observations should be lost, and the too well grounded belief that I may never be permitted to make them known, as I had once hoped, in another and mere extended form.

It is well known that some of Dr. Bird's views have been freely criticized, but none of his statements of fact, or any of his arguments, have ever yet been disproved. It is true that Prof. Lehmann has shown that Dr. Bird's method of estimating the solid residue of urine by its specific gravity, is subject to error; and the same learned author has also sarcastically said, that "The urea diathesis assumed to exist by English physicians, may perhaps be diagnosed from the specific gravity of the urine; as yet, however, this disease has not, so far as we know, been observed on the continent, and indeed we almost doubt if it ever will be. How rapidly this supposed chronic affection would run its course, if such masses of urea passing daily through the urine were the *detritus* of the tissues, and not, as is probably the case, merely the result of a good digestion of large quantities of animal substances!"* But such criticism cannot overthrow the facts and principles embodied in Dr. Bird's work. Indeed, we do not conceive that the strength of Dr. Bird's arguments concerning the depuriation of the blood by chemical agents, necessarily or in any measure depends upon the theory of a "urea diathesis."

* Physiological Chemistry, vol. ii, p. 435.

The following are, briefly, Dr. Bird's views concerning blood-depuriation by medicinal, and especially diuretic agents.

In all classes of animals, the kidneys, by acting as *blood-depuriants*, are ever active in preserving life by removing from the circulating mass, containing as it does part of the *sewage* of the body, certain matters, which, if retained, would produce, not merely inconvenience, but death. Every animal develops in his own organism, during the process of metamorphosis of tissue, a series of nitrogenized substances, which are, if allowed to accumulate in the blood, as poisonous to it as the deadly secretion of the puff-adder is to a person into whose blood its fatal bite has conveyed it. Hence, although the influence of the skin, the lungs, and the liver, in preserving the blood in a state fit for the nutrition of the body, is well recognized, and its importance admitted, we can hardly attribute sufficient consequence to the depuriating influence of the kidneys.

For some time past Dr. Bird has been pursuing an extended series of investigations in reference to the relation between the excretion of solid matters from the blood by the kidneys, and the progress of cure in various important diseases, particularly in malarious diseases, and in rheumatic and cutaneous affections; and he has very satisfactorily if not conclusively shown that it is by such excretion by the kidneys, aided in a subordinate degree by the other eliminative organs, that the ultimate process of cure in all zymotic and specific diseases is effected. He conceives that even quinine cannot effect the ultimate cure of malarious diseases, bnt that it may be essential to the relief of the nervous system, especially the poisoned or impaired organic or ganglionic structures. We think that the facts of observation and experience corroborate the truth of Dr. Bird's observations and theory upon this subject, though further investigation is demanded.

After stating his argument, and the facts upon which it is based, Dr. Bird proceeds to state that—

It is not in ague alone that this remarkable critical increase in the excreted solids of the urine is observed; the same thing is, if possible, still more marked in cases of some other diseases, especially acute rheumatism. In every case of this affection in which the urine was carefully collected, and the quantity of the contained solids calculated, we invariably found that, whenever the patient improved, the quantity of solid urinary excreta steadily and considerably increased; any relapse being attended with as remarkable a diminution. These observations were neither small in number, nor hastily made; they extended over several years, and amounted to upwards of four hundred in different diseases.

Having thus accumulated sufficient evidence to prove that the old idea of the washing away a *materies morbi* from the blood by the urine was at least based on truth, the next question for consideration was, how far it were possible to aid this function of blood-depuriation; and thus, by

expediting the removal of noxious matters from the system, hasten the cure of the patient. That we do possess such means I am as convinced as I am of the existence of the function of blood-depuriation itself.

In the treatment of disease by diuretic remedies, Dr. Bird would make a careful distinction between those substances which merely act as *renal hydragogues*, and those which are found to act as *chemical* or *renal depuriants*, which, he says, "constitute a class of agents now almost completely neglected, and indeed hardly recognized, and yet of the highest value in the treatment of disease." The following tables, showing the effects of different articles of these two classes of diuretic agents, serve to illustrate our author's argument. The first table he has calculated from observations recorded by Professor Krahmer, and which also fully accords with his own experiments.

Hydragogue Diuretics.

Medicine given.	Solids in the urine of twenty-four hours.	Combustible (animal) matter in.	Saline matters in.
None, . . .	2 4 ounces.	1.28 ounces.	1.13 ounces.
Juniper, . .	2.12 "	0.94 "	1.18 "
Venice Turpentine,	1.94 "	1.11 "	0.83 "
Squill, . . .	2 25 "	1.04 "	1.21 "
Digitalis, . .	2.45 "	1.28 "	1.17 "
Guaiac, . .	2.45 "	1.38 "	1.05 "
Colchicum, . .	2.32 "	1.36 "	0.96 "

" *Remedies, then, which exert no chemical action on organic matter out of the body, appear to be incapable of augmenting the quantity of solids in the urine, and hence are only of use in increasing the elimination of water—they may and do act as renal hydragogues, but not as renal depuriants.*"

In the following table Dr. Bird has exhibited the effects produced upon the character of the renal secretions by administration of one of the—

Renal or Blood Depuriants.

	Without Medicine.	After ʒiij. Potassa Acetatis.
Quantity of urine in twenty-four hours,	fʒxvj.	fʒxivj.
Specific gravity of . . .	1.025	1.017
Solids in	416 grs.	782 grs.
Uric Acid, ...	2.6	3.45
Urea, ...	130.5	202.40
Suluble Salts, . . .	72.0	248.40
Insoluble Salts, . . .	21.6	32.25
Organic matters not included in the above,	189.3	295.50
	416.	782.

Here we see that all the solid or organic constituents of the urine are very largely increased in amount by the agency of the acetate of potassa. Now, deducting the weight of the medicinal salt, it is manifest that the balance of excess, 186 grs., must have occurred as the result of the process of eliminative metamorphoses; providing that the other eliminative organs continued in a normal condition.

Whether this occurs as the result of increased rapidity or greater completeness in the metamorphoses of the tissues; or whether it be a result of metamorphoses occurring in the circulating fluids, the value of the fact is the same, if, in connection with or resulting from this increased elimination, the processes of disease are arrested, and health restored. It is not necessary to suppose that any of these *renal depuriants* act as oxidizing agents, converting uric acid into urea and its cognate compounds, as some have supposed; but the following interesting facts are stated by Dr. Bird.

This class (*renal depuriants*) includes the alkalis, their carbonates, and their salts, with such acids as in the animal economy are capable of being converted into carbonic acid, including the acetates, tartrates, citrates of soda and potass. These remedies all act alike, actively stimulating the excreting function of the kidneys, and generally augment the bulk of the urine; but they do more, they actually increase the metamorphoses of tissue by, in all probability, a direct chemical action on the elements of worn-out and exhausted tissue, or other matter in capillary laboratory of the body. It is well known that alkalies and their carbonates readily dissolve albumen out of the body, and even break it up into various secondary products. * * * It is exceedingly probable that some such changes occur in the living organism itself, and we should almost expect to find the chemical diuretics effecting important changes. This I have repeatedly confirmed by absolute experiment. * * * In the example adduced, not only did the patient lose an excess of 30ozs. of water in the twenty-four hours, but she wasted to the extent of 190 grs. more than if no remedy had been given, to this extent had the blood been depuriated of those elements which yielded easiest to the influence of the alkaline salt. * * * We further learn, that although a large proportion of matter was metamorphosed into both uric acid and urea, after the administration of the acetate, still, that the greatest increase was in that mixture of organic products set down as extractive, and which consisted chiefly of creative, creatinine, uroxanthine, and matter rich in sulphur.

Referring to the curative agencies resorted to by the old physicians, who resorted largely to various diuretic decoctions, diet, drink, &c., Dr. Bird remarks, that—

It is true that, in looking at some of their prescriptions, we do not generally observe remedies which have now much confidence placed in them as trustworthy diuretics, but then an important element of their

potions is most undoubtedly the water of the decoction employed, not in doses of tablespoonfuls, but, as was common in former days, of pints. A most important truth here demands our attention. It may be said that it is true that if a patient takes a pint or two extra of water, he will, supposing no organic lesion exists, excrete a large bulk of urine, from the necessity there exists for pumping off the excess of diluent partaken of. In this way a pint or two of water becomes a diuretic. * * * This observation affords a key to many of the undoubted cures effected by the use of many of the mineral springs. Some of them are, like Malvern, remarkable only for the positive purity of their water — setting aside (what we must never forget) the influence of change of scene and association, the diminution of the friction of mind on matter by business relaxation, healthy air and exercise, amusement of mind and excitement of renewed hopes, we cannot help recognizing in the action of the kidneys—excreted by a so-called mineral water—a most important agent. A man laboring under some chronic ailment, which, perhaps, like old rheumatism, is the direct result of unhealthy constitution of the blood, starts for one of the Brunnens or Spas, and with fearful devotion swallows the enormous quantity of ten or fourteen beakers of the warm and bubbling water. In a few minutes he begins to secrete abundance of urine, and is engaged alternately drinking and micturating for part of the morning, active exercise when possible being enjoined the whole time.

As long ago as 1841, it was shown by M. Becquerel*, that pure water has the effect of washing away an extra amount of debris or solids from the circulation, when that common drink is taken in considerable quantities. And though it is not probable that the water-god of Græffenburg, or any of his progeny, ever profited by this discovery of M. Becquerel, it is true that the copious potations and the free application of water, as practised by these ignorant pretenders, has been of essential benefit to many a sufferer from chronic rheumatism.

Dr. Bird has fully satisfied his own mind that the chemical diuretics are the most appropriate and efficient agents that can be resorted to in the ultimate cure of malarious diseases; and after detailing his observations upon this subject, he proceeds to remark that—

It is, however, in that really formidable disease, *acute rheumatism*, a malady which merits the most careful and jealous watching, on account of its too frequently leaving behind disease of the cardiac valves or pericardium, that the effects of the acetate are most remarkable. I would not willingly use language which was not completely compatible with experience, but I do not still hesitate to declare that I have never seen the disease in question yield with so much facility to any other remedy. In the severest cases which have been admitted into the Hospital under my care, I have seen the cure to be more rapid, and the immediate relief

* Séméiotique des Urines, Paris, 1841. p. 20.

to the patient more marked, by the use of the acetate of potass in quantities of half an ounce, administered, largely diluted, in divided doses, in twenty-four hours, than by any other treatment. In three days I have repeatedly found the exquisite pain of the joints nearly absent, the patient comparatively comfortable, and able to bear with greater ease the helpless state in which the still swollen joints place him. In no case has any ill effect followed the use of the remedy, and whilst the cure has been far more expeditious, the ill effects of colchicum and mercury have been avoided, the pain remarkably and suddenly lessened, as soon as the urine becomes alkaline and rises in specific gravity. * * * I could quote a large number of cases from our clinical report books to demonstrate the efficacy of this plan of treatment. * * * * The only addition to this treatment has generally been a mercurial laxative, if constipation existed, and a full dose of Dover's powder on the first day or two of treatment, if the pains be severe, the joints being wrapped in sheets of wadding, a plan I have invariably followed since noticing the comfort it afforded to myself in a severe attack ten years ago.

We have here selected some of the more prominent points in Dr. Bird's argument and statements concerning the process of blood-depuration and the effects of chemical diuretics. There are many other interesting and important facts and suggestions incorporated in this last edition of Dr. Bird's excellent treatise, which are relevant to the pathology and cure of rheumatism, but we have not space for further quotations. Dr. Bird still firmly maintains his positions in reference to the laws governing the operation of diuretics. In reference to his second law, viz. *Bodies intended to reach the kidneys must, to ensure their absorption, have their solutions so diluted as to be of considerable lower density than either the liquor sanguinis or serum of the blood*, which has lately been called in question, by Mr. Headland, in his Essay on the Action of Medicines, he asserts that, notwithstanding the objection urged by Mr. Headland, a long and careful observation has quite convinced him of the accuracy and practical importance of the principle in question. E. H.

BIBLIOGRAPHICAL NOTICES.

Art. X.—*Elements of Chemistry.* By M. V. Regnault. Translated from the French, by T. Forrest Betton, M.D., M.A.N.S., and edited with notes, by James C. Booth, and William L. Faber. Second edition. Two volumes. 8vo., pp. 671 and 804. Philadelphia: Clark & Hesser, 1853.

We welcome the appearance of these volumes on the *Elements of Chemistry*, a science to which we are abundantly indebted for the recent important advances of physiological medicine. The distinguished author

has treated the various subjects with such thorough completeness as to give to his work the character of a cyclopædia of chemistry, while it is yet sufficiently elementary to meet the wants of the student, and to serve as a text-book for the teacher.

The introduction contains a very complete exposition of the Principles of Crystallography. Part I. is devoted to the Chemistry of the Metalloids, and occupies about one-half of the remainder of the first volume. Part II. treats of the Alkaline, Alkalino-earthy, and Earthy Metals, commencing with a brief explanation of the Principles of Geology, and the relation of these metals to the different geological formations, and concluding with the description of the manufacture of several important products which contain the compounds of these metals. Part III. considers those metals which are capable of being used in the metallic state, with full descriptions of the metallurgic processes by which their ores are reduced. Part IV. is devoted to Organic Chemistry, and is full and complete. Both volumes are fully illustrated, and together form an excellent treatise on the elements of chemistry, and contains the best exposition of the application of the metals to the arts with which we are acquainted.

ART. XI.—*On Diseases of the Liver.* By GEORGE BUDD, M.D., F.R.S., Professor in King's College, London, &c., &c. Second American, from the last and improved London Edition, with Colored Plates and Wood-cuts, 8vo., pp. 468. Philadelphia: Blanchard and Lea, 1853.

THE work of Dr. Budd on the Diseases of the Liver needs no word of commendation from us. Since the issue of the first edition in 1845, it has been a standard work in our medical literature. The second edition is in every respect all that could be desired, both in regard to its literary character and its typographical execution.

ART. XII.—*The Practice of Surgery.* By JAMES MILLER, F.R.S.E., F.R.C.S.E., Professor of Surgery in the University of Edinburgh, &c., &c. Third American, from the second Edinburgh Edition, edited, with Additions, by F. W. SARGENT, M.D. Illustrated by Three Hundred and Nineteen Engravings on Wood, 8vo., pp. 720. Philadelphia: Blanchard and Lea, 1853.

PROF. MILLER is better known in this country by his work on the Principles than by that on the Practice of Surgery. The former is an ably and classically written work, replete with sound instruction, and is very generally read by the student and practitioner. The present volume is a well-written treatise on the application of the principles to the practice of surgery, and is a necessary part of the preceding work. Together they form a very complete system of surgery, second in importance only to the larger and more comprehensive work of Chelius. One of the best evidences of its popularity in this country is the early demand for a third edition. The ample notes of the editor make this edition much more

desirable for the American student than the foreign edition, as they principally relate to the improvements in surgical practice in this country. The work is bountifully illustrated.

Art. XIII.—*A Practical Treatise on the Diseases of Children.* By D. Francis Condie, M.D. Fourth Edition, Revised and Augmented, 8vo., pp. 732. Philadelphia: Blanchard and Lea, 1853.

The treatise of Dr. Condie on the Diseases of Children is one of the most popular works which has yet issued from the medical press of this country. It has now reached a fourth edition, revised and enlarged, and is still more worthy of the attention of the profession. We have previously spoken so favorably of this work as to require from us at this time only the announcement of the new and improved edition.

Art. XIV.—*The Microscopist; or, a Complete Manual on the Use of the Microscope:* For Physicians, Students, and all Lovers of Natural Science. Second Edition, Improved and Enlarged, with Illustrations. By Joseph H. Wythes, M.D. Philadelphia: Lindsay and Blakiston. London: Trubner and Co., 1853, 8vo., pp. 212.

We are glad of the opportunity which the appearance of a second edition of Dr. Wythes' Manual offers, of calling the attention of those of the profession who are entering upon the study of microscopical science, (and we rejoice that the number is so rapidly increasing that the demand for microscopes exceeds the supply,) to this little work on the employment of the microscope. A work of this description is almost indispensable to their successful mastery of the rudiments of microscopy. Although the volume of Dr. Wythes has not the range and completeness of the valuable work of Quekett, yet it contains all that is essential to the student's early progress, and has the additional merit of being much less expensive and more accessible. We are not surprised, but much pleased to learn from the preface, that the first edition, which was published only a little more than a year since, had a very rapid sale both in this country and England, and was soon exhausted. We cordially recommend the present enlarged and improved edition to the attention of "Physicians, Students, and all Lovers of Natural Science."

Art. XV.—*The Maternal Management of Children, in Health and Disease.* By Thomas Bull, M.D. Second Edition. Philadelphia: Lindsay and Blakiston, 1853, 8vo., pp. 424.

This is another medical work intended for popular reading, and designed for the instruction of mothers in the management of infants. The style is simple, and the instructions are judicious.

PART THIRD.

FOREIGN MEDICAL RETROSPECT.

PRACTICAL MEDICINE.

On the Remedial Effects of Lemon Juice in Rheumatism, and on Sources of Fallacy connected with its Use. By G. Owen Rees, M.D., F.R.S.—It is now nearly three years since I proposed to treat rheumatism by the administration of lemon juice. This plan having been greatly applauded by some, while it has been condemned by others, I feel myself called upon, as the proposer of the remedy, to offer a few remarks, which I trust may have the effect of in some measure reconciling those discrepancies in result that would seem to have prevailed up to the present time. The very striking and marked advantage which I derived from treating with lemon juice certain cases comprised under the generic term rheumatism, was a fact which, taken in connexion with its occasional failure, early produced, in my mind, a conviction that, under that term, we included diseases essentially different, and only similar in producing the same ultimate pathological results. In a short notice, which appeared in The Lancet some months ago, I alluded to the probability of the above explanation applying to this difficulty, and my attention has been since directed to the determination of those points of difference in rheumatic cases which might indicate to us those amenable to the lemon juice treatment, and those in which we cannot hope to observe its beneficial effects.

The first rheumatic cases in which I tried this remedy were of the acute kind, and I very soon discovered that the more chronic forms were not so readily relieved by the same treatment. Acute cases were, however, sometimes, though but rarely, obstinate in recovery. These resisted other remedies subsequently administered, and ran the usual course of several weeks, and though they seemed to prove that lemon juice had done as much good as anything else, they still left unexplained why acute cases, quite as severe, nay, far severer, had been relieved in a few days only. It is highly probable that this difference in result may sometimes arise from causes we can scarcely hope to detect; but such instances will probably be rare, and in most cases I believe the difficulty is to be cleared away.

Among the cases admitted from time to time into Guy's Hospital, I have had opportunities of satisfying myself that acute articular rheumatism

is frequently complicated by the presence of three conditions, which tend to keep up the disease, and so to interfere with the favorable action of lemon juice. These are—1stly, Syphilitic rheumatism. 2ndly, Gonorrhœal rheumatism. 3rdly, A pseudo-rheumatic affection occurring in connexion with purulent discharges not necessarily gonorrhœal. Over these pathological conditions lemon juice exerts no favorable influence.

Now, not only may the above-mentioned complications interfere with the success of the remedy, but I have seen it exhibited in the last described, where the whole of the rheumatism present might, in all probability, be correctly attributed to the existence of a purulent discharge from the vagina, and where no remedy whatever produced a favorable influence, till recourse was had to treatment directed to the cure of the discharge.

The true nature of cases such as these is very apt to be overlooked; and I shall therefore here give an instance showing the necessity of attending to the point in question:—

Ann B——, aged thirty, was admitted into Guy's Hospital, Oct. 13, 1852, suffering from what appeared to be chronic rheumatic gout. When young she enjoyed good health, and commenced to menstruate when thirteen years old, and has always been regular. Has been married four years, and had a child about two years after marriage. Soon after her confinement, she had an attack of rheumatism affecting the joints. The pains in the head, before complained of, and which had continued up to this time, now ceased. This attack rendered her incapable of performing her household duties, and it continued to the time of her admission.

State on admission: Joints of extremities much swollen, and very painful on pressure. There is a copious yellow discharge from the vagina, but she denies ever having had gonorrhœa. Respiratory and heart sounds normal. Tongue clean, appetite good, bowels open. Pulse 84. To take iodide of potassium, three grains, in mint water, three times a day. Cod-liver oil night and morning.

18th.—Complains of hæmorrhoids; much the same. Six leeches to the anus. Linseed poultice to the part affected.

25th.—No improvement in the pains in the joints. Guaiacum mixture, one ounce three times a day. Di-sulphate of quinine, two grains; acetic extract of colchicum, one grain; powdered ipecacuanha, two grains: mix, and make into pills; to be taken night and morning.

29th.—Pains not at all relieved, but the medicine purges her. To discontinue the present medicines, and to take chalk mixture, one ounce, after each liquid stool, until diarrhœa cease.

Nov. 1st.—Pains no better. Diarrhœa soon left her. Lemon juice, three ounces, three times a day.

8th.—No better. The vaginal discharge still continues. Compound tincture of guaiacum, half a drachm; mucilage mixture, one ounce, three times a day. Dover's powder, eight grains every night.

11th.—Is no better. Soda poultice to the part affected. Continue medicine.

15th.—Is much the same. Benzoic acid, five grains; compound tincture of camphor, half a drachm; mucilage mixture, one ounce, three times a day.

22nd.—No improvement. Compound iodine julep, one ounce, three times a day. Dover's powder, five grains, every night. Turpentine liniment.

Dec. 4th.—Is no better. Continue the medicines. From this date baths and iodine friction were tried up to

Jan. 3, 1853.—Shoulders and arms are now rather less painful. Pulse 76, full and soft. Tongue clean. Bowels relieved once daily. Sleeps better at night. Conium mixture three times a day. Omit baths.

13th.—Pains of limbs still continue. The discharge from the vagina is profuse. Powder of cubebs, one drachm, three times a day.

17th.—Is decidedly improved. The swelling and tenderness of joints less. The discharge from the vagina less. Bowels regular.

From the last date given, this case rapidly got well; but, as will be seen, neither lemon juice nor any other remedy afforded relief till the profuse purulent discharge was checked. The whole case was characterized by symptoms approaching to the subacute form; and it therefore would not have been selected from what I already knew as one likely to be much benefited by lemon juice. The observations I have now made on the sequel of the case, will, however, I trust, be regarded as a step in advance, and serve to establish it as a more definite type of a class of cases which we shall in future at once exclude as unfit for treatment, either by lemon juice, or any other of the ordinary remedies employed against rheumatism, but easily relieved when their true pathology is ascertained,

From what I have advanced, it will be observed, that I consider lemon juice the antidote to the true rheumatic diathesis; and that I expect to account for failures in treatment, by detecting either complications, or complete pathological differences.

I have already given a case illustrative of the latter character, and I wish now in addition to direct attention to two other forms of disease belonging to the same class, which I have seen mistaken for rheumatism, and treated by lemon juice, without the least benefit being derived. The first of these is the pseudo-rheumatic affection sometimes observed during the course of Bright's disease. Though the pathology of this affection is as yet but imperfectly understood, still the symptoms and progress differ sufficiently from those of true rheumatism to enable us to draw a distinction; and I believe we may now fairly add another distinctive mark in the fact that the disease in question is not benefited as true rheumatism is by the exhibition of lemon juice. I have seen the remedy here fall into temporary disrepute till the mistake was detected. The other form of disease I would allude to, and which is perhaps characterized by as severe torture as any of those yet treated of, is observed in connexion with spinal deformity. Here the pains are most extreme, and vary in intensity according to the health of the individual. Of course lemon juice cannot here be expected to benefit the patient, though its credit as a remedy has often suffered owing to its administration in such pseudo-rheumatic cases.—*London Lancet.*

On the Condition of the Urine in Typhus and Typhoid Fevers. By George W. Edwards, M.B. Cantab.—Since the researches of

observers, and more especially of Dr. Jenner, have established the fact that typhus and typhoid fevers are essentially different diseases, and that the poison of the one does not produce the other, every diagnostic feature becomes of interest. My object in the present paper is to show that a difference in the qualities of the urine exists, and that in the one fever one condition of this secretion, and in the other another condition, supervenes at about the same stage of the disease.

1. *Of the Urine of Typhus Fever.*

The characters of the urine of typhus fever which I desire to point out are—(1) *That it is generally pale;* (2) *That it is of rather low specific gravity;* (3) *That it contains albumen* at an early period of the disease. The colour and appearance of the urine to the naked eye is indicated in the original tables, and requires no further notice.

It has been remarked by Lehmann that albumen not unfrequently appears for a short time in the urine, in many acute diseases unconnected with affections of the kidneys. It has been found in pneumonia, erysipelas, scarlatina, phthisis, and various other disorders, including *typhoid* fever. "In febrile diseases, properly so called, and particularly among the exanthemata," according to Dr. Begbie,* "a temporary albuminuria may frequently be observed at two distinct and different periods of the disease, the first at nearly the outset of the febrile excitement, and the second towards the termination of the case, when the crisis is passed, and the process of convalescence commenced." This remark does not strictly apply to typhoid fever, as will presently be shown; for when albumen appears in the urine during the progress of that disease, it is only "after the crisis is passed." Of this fact I am assured by my own observations, as well by the testimony of others.

In *typhus*, however, the urine becomes albuminous at an *early* period of the fever, and I believe that it invariably becomes so in this latter disorder; for out of twenty cases in which I examined the urine, albumen, accompanied with low specific gravity, was present in fourteen, in which the urine was tested between the sixth and eighteenth day of the fever. In the remaining six, the urine was not tested before the twentieth day, at which period the albuminuria had ceased in all the cases in which I had previously found it to exist; and in five out of these six cases, the specific gravity was below 1014, and therefore below the standard of healthy urine, and as albuminuria is almost constantly attended with low specific gravity, it appears not improbable that in these cases albumen might have been present in the urine at an earlier period than that at which it was tested.

The specific gravity of the urine was low in all the twenty cases which I have recorded, and it was observed, that in the fourteen cases in which albumen was detected, the specific gravity rose gradually, in proportion as the albumen disappeared, until at length it acquired a healthy standard.

The explanation which may be given of this state of the urine is perhaps somewhat doubtful, but it appears highly probable that the kidneys become congested at an early period of the fever, and that the effusion of serum is a consequence of the congestion. The results of the

* Medico-Chirurgical Review, July, 1853.

post-mortem examinations recorded by Dr. Kirkes, in his position as Medical Registrar at St. Bartholomew's Hospital, at all events favour this view of the matter; for, in six out of seven cases of typhus* which he has reported, the kidneys were found to be in various stages of congestion. In five it is stated that there was "no distinct deposit," and two were "dark, mottled, smooth, friable."

It must not, however, be forgotten that in typhus the blood is undoubtedly in an altered condition, and that this state of the blood may be the cause of the congestion, or even the direct cause of the effusion of serum.

2. *On the Urine in Typhoid Fever.*

Several writers have noticed the more obvious qualities of the urine of *typhoid fever*, namely, its *bright amber colour*, and its *high specific gravity*. It has been more recently observed that it deposits on the addition of an acid a *non-albuminous* precipitate at nearly the same period of the disease at which, in cases of *typhus* fever, albumen is present.

On the addition of a drop of *any* mineral, or of acetic acid to a moderate quantity of the urine of a typhoid fever patient in a test tube, a precipitate falls, generally very abundant, like a dense cloud, and to the eye, very like albumen; but upon the addition of an excess of acid, or of a solution of potash, or upon the application of heat, the precipitate entirely disappears; in the last case, however, generally reappearing when the solution becomes cool.

It is almost certain that this precipitate consists of urates, not only from the reactions already mentioned, but because, as Dr. Bence Jones and Dr. Garrod have observed, uric acid crystallizes out of it after some hours. A fact confirmatory of this view is, that in rheumatic fever, where the urates are deposited spontaneously, if the deposit be dissolved in liquor potassæ, it may be again precipitated in a form precisely similar to that produced in the clear high-coloured urine of typhoid fever, by a drop of acid.

This precipitate is not *peculiar to typhoid fever*, for Dr. Jenner, in one of whose cases at the Hospital for Sick Children, I first observed it, tells me that he has found it in a case of meningitis, and I have myself seen it in the urine of scarlatina at the period when "febrile excitement" prevails. And it is well known that salts of uric acid are deposited from the urine in very many febrile conditions of the system.

The precipitate which I have described, takes place in the urine of typhus fever in a very large proportion of cases, and, as I believe, *invariably*. I found it in thirteen out of eighteen cases in which I examined the urine of patients suffering from this disease. The remaining five were all in the end of the third, or in the fourth week, when the disease may be said to have ceased.

In all the cases, albumen was absent, and I believe it will always be found absent, when the kidneys are previously healthy, during the continuance of the fever, or at least during the early period at which albumen appears in typhus; and in the instances in which albumen has been observed in the urine of *typhoid* fever, the crisis of the disease had probably passed.

* *i. e.*, Fever without any lesion of the small intestines.

In those of my cases in which the non-albuminous precipitate was produced, the urine had a high specific gravity, a condition in which it accords with the urine of most diseases attended with febrile excitement, and one in which it again differs from typhus fever.

It is an interesting fact that in cases of typhoid fever fatal before the fourteenth day, the kidneys are not generally congested, as they are in typhus at the same period of the disease; for of thirty-four cases recorded at St. Bartholomew's Hospital, by Dr. Kirkes, they are reported as congested only in ten, in all which the disease proved fatal after the fourteenth day. The fact that the kidneys are thus congested at a late stage, agrees with the observations above referred to, that "after the crisis is passed," albumen does occasionally appear in the urine of typhoid fever.

The foregoing facts seem, then, to render the following conclusions highly probable:—(1) That *albumen* appears in the urine of *every patient* affected with *typhus fever*, at an *early* period of the disease, and that in such cases the urine is of low specific gravity; (2) That in the *early stages of typhoid fever* albumen is absent, while, on the other hand, the urine has an *unnaturally high specific gravity*, with excess of one of its natural constituents, viz., urate of ammonia; and (3) That the state of the kidneys in either disease corresponds with the condition of the urine, these organs being *congested* in *typhus*, and generally *healthy* in *typhoid* fever.—*Monthly Journal of Med. Science.*

Observations on the Fevers of Jamaica. By J. Magrath, Senior Medical Officer of the Public Hospital, Kingston.—During a residence of thirty-five years in this island, I have never met with a single circumstance that for a moment induced me to believe that the fevers which occasionally prevail here epidemically, or arise sporadically, are ever of a contagious nature.

The intermittent, remittent, and yellow fevers appear to me to be modifications of the some disease, influenced by particular circumstances, and to arise from the same cause,—viz., a deleterious principle (generated during the decomposition of certain substances, principally vegetable), the production of which is materially influenced by the degree of heat and moisture present, and by the existing state of the atmospheric and telluric electricity.

In 1819, during the prevalence of the fatal epidemic of yellow fever among the troops at Up Park Camp, it repeatedly happened that, on going to the hospital, I passed over spots of small diameter, from whence a hot moist air seemed to issue. Upon afterwards examining these situations, I could not, however, discover any cause to account for the circumstance.

I have known patients to be admitted into hospital who, after having had two distinct febrile paroxysms, have lapsed into yellow fever, and died with black vomit. And again, I have known others who were admitted with the muddy injected eye, and drunken suffused appearance of the countenance, deep-seated pain in the orbits, and other pathognomonic symptoms of yellow fever, lasting for two or three days, have afterwards two or more paroxysms before they become convalescent.

Cases of this kind are rare, but still sufficient, I think, to establish the connection of yellow with intermittent fever. Sir William Pym attempts to distinguish what he calls Bulam from aggravated miasmatic fever; but every symptom he describes as diagnostic of the one I have repeatedly seen in the other.

Yellow fever has not for several years prevailed as an epidemic in Kingston; but every now and then we receive patients suffering from it into the public hospital, and the most of these cases come from coal ships.

In 1848, the crew of a vessel, that had a few months previously been employed in carrying guano, suffered most severely; and in 1849, the persons on board three coal ships, which, after discharging their cargo, took in some impure ballast, were attacked with this disease in its most virulent form, whilst the other vessels in the harbour were comparatively but little affected. The sick from these ships were placed amongst the other patients in the hospital, but the disease did not spread to them.

Unacclimated individuals of every race are liable to attacks of yellow fever, although I believe the negro will often have remittent fever when the white man would be subject to the more aggravated form. I have known persons of color, natives of the mountain districts, and who had never been off the island, to be attacked on coming to Kingston, and die on the third or fourth day, with black vomit, hæmorrhage, etc.

Yellow fever never attacks the thoroughly acclimated, although persons who have had it once are not invariably exempt from a return of it. I have myself attended more than one patient in two well-marked attacks of the disease; and in 1827, shortly after I engaged in practice in Kingston, I was called to see a gentleman, who died on the third day of fever, and who, I was assured by Dr. Adolphus, deputy-inspector of hospitals, and by his family, had, about six months previously, a similar attack with well-marked black vomit. Persons have been known to die of remittent fever after a residence of upwards of twenty years in the island.

We have lately been receiving into the public hospital several persons in the advanced stage of remittent fever, or suffering from its sequelæ, who contracted the disease at Chagres. In them the spleen and liver are always congested, and the lungs occasionally so. The liver and lungs are occasionally disorganized. The greater number are dropsical, and suffering from sub-acute inflammation of the alimentary canal, accompanied by diarrhœa; in several a marked change is observed to have taken place in the blood.

I have seen a few instances of the algide form of fever mentioned by Dr. Barclay, and believe that when it occurs a paroxysm has taken place, which from some cause does not proceed beyond the cold stage, and in which the patient dies or gradually recovers. In 1823, I was called to see a lady in St. Elizabeth's, who had a severe paroxysm of fever, and whom I found in the hot stage. At daylight next morning she was freer from fever, and feeling comfortable. At nine o'clock A.M. she complained of being weak, and as I was in the house I saw her immediately, and found her in a state of collapse, which gradually increased until she became deadly cold, like a person in the last stage of cholera; in this state she remained upwards of thirty-six hours, when, by the continued

use of stimulants, and keeping her wrapped in blankets, she gradually emerged from it, and recovered without any return of fever. Quinine was not in use in this island at that time

As these different forms of fever arise from the same cause, their treatment is based on similar principles, modified by the intensity of the disease. The indications appear to be, "to relieve such viscera as become the seat of congestion, or are threatened with it; to overcome the fever, and to effect a counterchange in the state of the blood."

General blood-letting in young and otherwise healthy subjects is frequently most useful, in many epidemics, when the patient is seen within the first few hours of the attack; but the indiscriminate practice of it has done a great deal of mischief, particularly when it has been had recourse to after the first day. Topical bleeding is a most valuable remedy, and can be employed at a later period than general blood-letting. Where there is tenderness of the epigastrium, with vomiting and ardent fever, it should rarely be omitted; sinapisms and blisters are also often useful.

The American practice of giving large doses of calomel and quinine is, I think, an excellent one. It is that which we have for the last few years followed in the public hospital, and which I adopt in private practice. The first dose of calomel (a scruple) will often of itself allay the irritation of the stomach, and enable it to retain the scruple of quinine which is given immediately afterwards. The quinine is then given in ten-grain doses, and the calomel in four-grain doses, every third or fourth hour, until an impression is made on the disease, or the quinine is found to be affecting the system, when the dose of it is diminished. Sometimes only the first dose of calomel is found necessary, in other cases several are required. It generally acts on the bowels, and supersedes the necessity of giving those large doses of purgative medicines that were formerly deemed indispensable.

When it is evident that a change is taking place in the state of the blood, the saline medicines recommended by Dr. Stevens are administered, in conjunction with or without quinine, as may be found advisable; and a perseverance in this treatment has saved the lives of many, who without it would have fallen victims to the disease. When the powers begin to fail, stimulants (particularly brandy) are given in moderate quantities.

Kreosote, hydrocyanic acid, and nitrate of silver have at times been found useful in arresting the vomiting; but in general the oxide of bismuth is found the most effectual remedy.

Black vomit was at one time believed to consist of vitiated bile; but it is now known to be disorganized blood, mixed with the secretions of the stomach. The bile, found in the gall-bladder of patients who die with this symptom, mixes readily with water; whilst a mixture of black vomit and water is turbid, and always deposits a sediment.

The yellow color of the skin, in most instances, arises from the diffusion of bile in the system, and is then first noticed in the eye. In other cases it has its origin in the decomposition of the blood, and in these is first observed in streaks about the neck. When arising from the latter cause, it indicates a most formidable disease.

When an epidemic breaks out, the removal of the people (when it is practicable) should be one of the first steps taken. The good effects

arising from this measure were strongly exemplified in the 60th regiment, a few years ago. It was suffering most severely from fever at Fort Augusta; but, on being removed to the mountains, soon got rid of the disease. Had they remained at the Fort their loss would, I have little doubt, have been enormous.

On the Treatment of Glanders in the Human Subject.—The *Association Medical Journal* for July 22 contains an elaborate *resumé* of ten cases of glanders in man, which have been reported since 1849. The following are the remarks upon the treatment: It will have been observed, from the cases related, that the majority of cases of glanders occurring in the human subject have been fatal; and that scarcely any plan of treatment which has been pursued has been able even to arrest the progress of the disease. Dr. Mackenzie, however, has succeeded in curing two cases by the administration of large and repeated doses of carbonate of ammonia (vide cases v and x).

The treatment which Dr. Mackenize pursued in case v, may be arranged under the following heads: 1. An incision in each of the Whartonian ducts; 2. An emetic of ipecacuanha; 3. Sesquicarbonate of ammonia in water hourly, as concentrated as it could be swallowed; 4. An opiate at bedtime, with wine and nourishment in such quantities as the patient could be prevailed on to take.

The principal reliance was placed on the administration of sesquicarbonate of ammonia in a concentrated form. Dr. Mackenzie was led to exhibit it in this way, by the good effects he had seen it produce when so given in the severe affections of the throat, met with in malignant scarlet fever. It was an essential part of Dr. Peart's treatment of scarlatina anginosa and maligna; and he gave it in a strongly stimulating form. The following was his mode of prescribing it, as described by Dr. Willan.

"He dissolves two drachms of the carbonate of ammonia in five ounces of water, and directs the patient to take two teaspoonfuls every two, three, or four hours, according to the urgency of the symptoms. If the difficulty of swallowing abate, and the patient wish for it, a little cold water may be added to each dose. Cold water, or toast and water, may be drank at pleasure.... In all variations of the disease, the volatile alkali was my specific, which I administered to between two and three hundred patients *successively* and *successfully*."

Similar testimony is afforded by Mr. Wilkinson, and by Mr. Ricardo, of Bow.

Dr. Mackenzie says: "I cannot doubt of the utility of this particular mode of treatment, in this and the other diseases in which I have tried it. . . I would observe, that there is much in the history of glanders which assimilates it to the more malignant forms of scarlet fever. Both, for instance, arise from a specific contagion; in both there is a similarity in the parts which are more especially implicated, viz., the throat, the respiratory mucous membrane, and the salivary glands; and in each there is a tendency to ulceration, sloughing, and destruction of the tissue of these parts. These circumstances furnish ground for believing, *à priori*, that the medicine which would be best adapted for one disease, would be most curative of the other; and this conclusion, which is suggested by

careful reflexion, is confirmed by personal observation, so far at least as the issue of the present case is concerned." (*London Journal of Medicine*, 1851, p. 798.)

On the Use of Chloroform in Hooping-Cough. By FLEETWOOD CHURCHILL, M.D., in a letter to PROF. SIMPSON.—You are aware that, in my work on Diseases of Children, published three years ago, I mentioned that I had tried the inhalation of sulphuric ether in hooping-cough with great benefit in about a dozen cases. After your application of chloroform for producing similar results, I tried it in hooping-cough with equal benefit in at least as many more cases. But I always found two obstacles to its full and fair administration to young children. In the first place, you cannot get them to give notice of the approach of a cough, so as to enable you to have the chloroform in readiness before the paroxysm commences, and when the paroxysm has commenced, as it consists of eight or ten expirations to one inspiration, the chloroform will have evaporated before it has been fairly inhaled. And secondly, young children have such a horror of anything near their mouth during the cough that they will resist your trying the chloroform as much as possible until they themselves have felt its power in relieving the cough. Owing to these two causes, and perhaps also to a want of clever management, on the part of the mother, who shall find it fail altogether, occasionally, and in other cases only partially, succeed; but when it is fairly tried, as I have already remarked, its use is most beneficial. I have all along felt very anxious to try it in young persons of twelve or fourteen years old and upwards, because with them we can avoid the two difficulties I have mentioned; but it was not until this year that I had an opportunity. Four cases have come under my care, and the results are as follows:—

CASE I. MISS D., æt. 16, had had hooping-cough a month, when I prescribed chloroform. There was no complication, but the whooping was frequent, especially during the night. She was directed to have the chloroform in readiness, and to use it with each paroxysm, and she assures me that in two days the whoop ceased. The cough lasted a few days longer, but it was slight and not in kinks.

CASE II. MISS A., æt. 20, had been ill with hooping-cough for about three weeks, when I prescribed chloroform. The cough was not very frequent, and there was no complication. Two days sufficed with her also to relieve her of the whoop; and the slight cough which remained subsided after a week or ten days.

In these two cases the effect seemed quite magical; both had the disease well marked, and the families of both were prepared for a disease of two or three months' duration, as was the case with other children.

CASE III. Miss B., æt. 18, took the complaint from her brother whom I was attending, and I therefore had an opportunity of giving chloroform from the commencement. She did not whoop any time she coughed; but she was directed to use the chloroform whenever she felt the tickling larynx, without waiting for a cough. By doing so, she found that she

could postpone the cough indefinitely, and if it came on suddenly, the use of the chloroform instantly suspended it. About three weeks elapsed before the tendency to cough and the use of chloroform ceased; but during that time she lost neither appetite nor flesh. She slept well, was in good spirits, and able to follow her usual occupation. She went to the country quite well.

Case IV. Master B., æt. 16, the brother of the last case, when I first saw him had the disease most severely. The kinks were violent and prolonged, the efforts to inspire, and the whoop excessive; it really seemed as if he would be choked, or that something would give way. He had lost appetite, sleep, and spirits, although the disease had not lasted three weeks when I saw him. I tried chloroform with him, and it at once reduced the number of paroxysms one half, but without mitigating them when they did occur. He took the chloroform very freely, and as he was not readily influenced by it, the quantity seemed to give him a headache, and he begged to be allowed to suspend its use. I the more willingly agreed to this, as he had a severe attack of diarrhœa. I therefore submitted two drops of prussic acid (Dub. Pharm.) with two or three of black drops three times a day. The improvement, begun under chloroform, continued under this treatment, and at the end of five weeks from the beginning of the disease the cough had ceased, and he had regained rest, spirits, and flesh.

Although this last case cannot be regarded as cured by chloroform, the paroxysms were first diminished by it, and, I have no doubt, that it contributed to the beneficial effect of the prussic acid. The three first cases, are, I think, very conclusive as to its value; and, if further experience confirms them, we shall possess a means of cutting short this disease in adults, who, when attacked, suffer so severely.

One word as to the mode of exhibition. In order to avoid the possibility of an overdose, I have never given the chloroform on a handkerchief or by means of an inhaler, but have directed the mother (in the case of young children) or the patient, to spill a little, say about thirty drops, in the palm of the hand, and hold this before the mouth and nose sufficiently near to inhale it fully, but not so close as to exclude a portion of atmospheric air. The best time to begin is just as the petient feels the irritation in the chest increasing to a cough, but if possible before the cough commences; and the inhalation should be repeated with each return of irritation, unless headache be produced.—*Monthly Journal.*

Administration of Ether in Capsules.—In the *Journal de Médicine et de Chirurgie Pratiques* for April, 1853, M. Clertan, of Dijon, states that he has for some time been accustomed to give ether in capsules in nervous affections. After several years of observation, by himself and others, he concludes that ether, when introduced in a known dose, pure, and without loss, into the stomach, has an effect which was totally unknown until the preparation of the ether-pearls (*perles d'éther.*) According to the old plan, the ether became partly volatilized before passing half way down the œsophagus; and what arrived in the stomach was dissolved in water, and in a state favorable to rapid and

sudden volatilization. M. Clertan has several times seen neuralgia, hemicrania, and gastralgia, arrested instantaneously by from one to three of these capsules; while ether draughts, and ether in syrup, had been largely given without any effect.

The editor of the *Union Médicale* for April 12th, in noticing M. Clertan's preparation, states that the ether capsules are already employed extensively by M. Trousseau, M. Pidoux, and other practitioners in Paris. The advantages of the capsules are:

1. The ether can be administered in a known dose—each capsule containing four or five drops.
2. The capsules are inodorous; so that ether can, without their knowledge, be given to persons to whom its smell is repulsive.
3. The capsules permit neither evaporation nor decomposition of the ether; they may be kept a year at least, or indefinitely, according to M. Clertan.
4. The ether arrives in the stomach without irritating the membrane of the mouth or pharynx, or producing cough; and it produces its sedative action by its rapid absorption.

A New Form of Director for the Remedy of Stricture by External Incision. By Prof. Syme.—Having performed the external incision in eighty cases of obstinate stricture, without hemorrhage, extravasation of urine, or other fatal consequence, I think the most determined opponent to this procedure will hardly venture to plead the danger attending it as an argument against the operation. With such overwhelming evidence of its safety, there can be no doubt that, if bad results do ever occur, they ought to be ascribed, not to the operation, but to the operator. The other great objection was the alleged want of permanence in the good effect obtained; and it is quite true that in some of my earlier cases, although there was complete relief in every instance at first, the disease did afterwards return. But I have long been satisfied, and have repeatedly explained, that the relapse on such occasions could be fully accounted for by the incision not being sufficiently free for dividing the whole extent of the contracted part of the canal; and I have now to propose a modification of the apparatus, which seems to promise a great degree of security, if not absolute certainty, in accomplishing this essential part of the process.

So long as an instrument employed to explore the urethra does not pass through the stricture, it distinctly determines the seat of obstruction; but so soon as its point gets fairly beyond the contraction, unless there should be a perceptible thickening of the canal, which seldom occurs except in its anterior part before the scrotum, there is no longer any trace of the stricture that can be detected by the most careful examination, even after the coverings of the urethra have been divided. Hence no doubt the long cherished, and still not entirely abandoned, errors, in regard to the situation of strictures, and especially the mischievous delusion of their occurring at the "neck of the bladder," in the membranous portion of the urethra, or at any point behind the bulb. Hence also the difficulty which has been experienced in passing catheters, after

it seemed that the stricture was freely divided; and hence also, no doubt, the imperfect results of some operations performed by myself and others.

Having long experienced the inconvenience attending this uncertainty, as to the precise seat of the stricture at the time of operation, I tried the effect of slipping a piece of elastic catheter over the director, so as to leave it exposed three inches from the point, and thence covered up to the handle. As this contrivance was found to answer the purpose in view completely, I had a solid steel director made of the same form, and I may now explain the mode of using it. The slender part having been passed through the contracted part of the canal, the director is confided to an assistant, who keeps it steadily pressed down upon the stricture with one hand, while he holds up the scrotum and penis with the other. The operator then cuts through the integuments and subjacent textures until he distinctly feels the guiding instrument, when, ascertaining at once where the stricture is seated, he inserts his knife in the groove at least an inch below the thick part, runs it forward to the termination, and then, taking the director in his left hand, withdraws it, together with the knife, still held at the extremity of the groove, so as to divide the strictured part completely, which is shown by the thick portion of the instrument freely passing the seat of its previous obstruction, when urged towards the bladder. If the operation has been properly performed, the catheter is then passed with the same facility as in a perfectly sound urethra. During the two months that have elapsed since the adoption of this contrivance, I have employed it in six cases, of which the leading particulars may now be stated.

The first case was that of a clergyman, who had suffered from the disease for a long series of years, without being aware of its nature. He had been obliged to relinquish his ministerial charge, and, although possessed of talents and acquirements of a high order, was thus compelled to pass his days in retirement without the consolation of hope, and with no occupation except endurance of the distressing and constantly increasing symptoms of the complaint. At length complete retention of urine requiring the use of instruments led to detection of the stricture, and he then became desirous of placing himself under my care, in compliance with the advice of his surgeon in the country. The "*res angusta*" attendant upon the interruption of professional duty for a long while prevented this step from being taken. But having become acquainted with his case through my friend Dr. John Taylor, I offered a private room in the hospital, which was readily accepted by the patient, whom I accordingly admitted on the 5th of May last. The stricture was anterior to the bulb, and very tight. I succeeded in passing a small bougie through it, and followed this by one or two of a larger size, but without affording the slightest alleviation of suffering, and therefore, on the 23d, proceeded to divide the stricture. This was done freely, fully an inch and a half of the urethra being laid open; and as the No. 8 catheter, afterwards introduced, occasioned no inconvenience, it was allowed to remain three days. On the 28th, the urine passed in a full stream by the urethra, without a drop escaping by the wound, which was almost healed; and on the 31st, that is, exactly a week after the operation, I met the patient walking in the open air,

perfectly well. Since this worthy man returned home, he has sent Dr. Taylor such striking statements of the relief thus quickly experienced from protracted and hopeless suffering, as I would gladly insert, if they were not so overflowing with the thankful effusions of a grateful heart.

The second case was that of a man, 48 years of age, who came from Newcastle-on-Tyne, and was admitted on the 6th June. He had been two months in the hospital there some time before, without obtaining either complete or permanent relief, and was anxious to have the stricture divided. The operation was performed on the 9th, the stricture being anterior to the bulb. On the 20th, he was walking about the ward, making water in a full stream, and discharging none by the wound, which was nearly healed. On the 24th, the wound was quite healed, and the patient declared that he made water better than he had done for fifteen years. On the 30th, he returned to Newcastle.

The third case was that of Captain ———, who came from Dublin on account of a stricture, which presented the irritable and contractile character, and had derived no benefit from dilatation, which indeed aggravated instead of relieving the symptoms. To satisfy myself upon this point, I introduced a small bougie, without causing the slightest pain or bleeding, but with the effect of inducing an attack of complete retention of urine. I then readily complied with the patient's desire to have the stricture divided. The operation was performed on the 12th of June, and on the 16th of July Captain ——— returned to Dublin in every respect perfectly well.

The fourth case was that of P. M'A., aged 60, admitted into the Royal Infirmary on the 3d of May last, suffering from the consequences of stricture, under which he had labored for more than thirty years. Abscesses had formed in the perineum, and, communicating with the urethra, without a free opening externally, allowed the urine to cause painful and dangerous distension of the scrotum and neighbouring parts. By means of an ample incision in the middle line of the perineum, I afforded relief from the most urgent symptoms, and then proceeded to remedy the contracted state of the canal. There was a very tight stricture just before the scrotum, about two inches and a half from the orifice, and another anterior to the bulb, the intermediate portion of the passage being irregular and thickened in its walls. It was not until after many ineffectual attempts that I succeeded in passing a small bougie fairly into the bladder, and then the repeated introduction produced no beneficial change in the disease, which continued to render micturition extremely painful, and so difficult that it was accomplished imperfectly, and only by straining at stool. I therefore resolved to divide the whole contracted part of the urethra, in compliance with the patient's urgent request. On the 20th of June, I introduced the guiding director so far as the anterior stricture permitted, then exposed the groove anterior to the bulb, and there inserting the knife, ran it forwards until obstructed by the notch in the thick part, when both instruments were withdrawn together, sufficiently for the complete division of the remaining contraction. A No. 8 catheter was retained in the bladder for three days; and

I beg the reader's particular attention to what followed. Although the urethra had been laid open to the extent of *three* inches, the hospital report states, that on the 24th (four days after the operation) the patient had not had a bad symptom, and passed his water half by the urethra, half by the wound. And on the 30th (ten days after the operation) it says, "Passed all his water by the urethra this morning; is quite well; wound nearly healed." He returned home on the 12th of July, in every respect enjoying the most perfect health, and entirely free from any vestige of urinary uneasiness.

The fifth case was that of a gentleman from Jamaica, where he had long suffered from stricture. Five years ago, he had repaired to London for relief from the disease without being aware of its existence; and as the eminent physician to whom he applied made no inquiry on the subject, he returned to the West Indies with abundance of prescriptions for correcting the secretion of urine, and allaying urinary irritation, but without having had anything done to remove the cause of disorder. On going home, he had the stricture detected, and was treated for it by bougies so ineffectually, that he submitted to the external incision, which was performed by a surgeon who had employed this operation with great success in some cases of the most obstinate character. The relief anticipated, however, was not obtained, and when the wound at length healed, after an irksome confinement of more than four months, the symptoms were nowise alleviated. The patient then resolved to cross the Atlantic a second time, but instead of proceeding again to London, directed his course to Edinburgh. On examination, I found that the stricture lay immediately below the scrotum, and coupling this rather unusual situation with the slowness of the wound to heal, I felt satisfied that the failure of the operation had resulted from the stricture not having been fully divided. The urine was so turbid and loaded with mucus, that the patient feared there was some disease of the kidneys or bladder; but having so often seen such symptoms existing as the effects of stricture, and disappearing upon its removal, I did not hesitate to advise another incision. It was performed on the 14th of June, with the most perfect success, and the patient departed for London on the 6th of July, without any remains of his long and troublesome complaint. This case seems to illustrate two very important points in the treatment of stricture. The first of these is, the inadequacy of incision to afford complete or permanent relief, unless it extends through the whole extent of the contracted part of the canal. If this gentleman had not applied to me, his case would doubtless have been regarded as a proof that external incision was not always sufficient for the remedy of stricture. In the second place, the long period that elapsed after the first operation before the wound closed, shows the bad effect of opening the urethra behind a stricture. There are indeed few more dangerous wounds than one so circumstanced; and it is difficult to credit the astounding reports that reach us of London hospital surgeons intentionally taking such liberties with the human frame, as an advantageous substitute for my operation. In the event of any more unfortunate people falling victims to this preposterous procedure, I hope the coroner of Middlesex will afford an opportunity of testifying as to the operator's claims for a free passage to Western Australia.

The sixth case was that of a patient, 77 years of age, who had been twice the subject of operation by M. Reybard, on whom the Parisian Academy of Medicine conferred a prize of L.500 for adopting the plan of internal incision for the remedy of stricture. This gentleman wrote to me from the south of France, stating that after suffering profuse hemorrhage, intolerable pain, and prolonged treatment under the care of Mr. Reybard at two different periods, seven years and two years ago, he felt so tormented by the disease, that he would willingly place himself under my care, if I could hold out any prospect of comfort for the remainder of his days. He was satisfied with my reply, and undertaking his long journey of 1200 miles, passed safely through Paris and London, and arrived here on the 2d of July. I performed the operation on the 5th, and by the end of a week he was restored to perfect health, which, judging from his sound and healthy aspect, he promises to enjoy for many years to come.—*Monthly Journal.*

Analytical Examination of all the Cases Admitted, during Sixteen Years, at the Small-pox and Vaccination Hospital, London; with a view to Illustrate the Pathology of Small-pox, and the Protective Influence of Vaccination. By J. F. Marson, Resident Surgeon to the Small-pox and Vaccination Hospital, London.—During the period comprised within this analysis, small-pox had been epidemic four times—in 1838, 1844, 1848, 1851; and rather more than half of the patients admitted into the hospital had been previously vaccinated. The analysis referred principally to the following points:

I. Natural small-pox.
II. Small-pox after small-pox.
  a. After natural small-pox.
  b. After inoculation.
III. Small-pox after vaccination.
  a. Number of cicatrices.
  b. Character of cicatrices.
  c. Vaccinated, but without cicatrices.
IV. Febrile eruptive diseases mistaken for small-pox.

A remarkable difference was observed between the vaccinated and unvaccinated patients, and also between the vaccinated cases themselves; some patients having the small-pox in a mild form, wholly devoid of danger, whilst others had it in great severity, scarcely, if at all, lessened by the previous vaccination. The author thought that the causes of this remarkable difference might be sought for among the antecedents in respect to the vaccination of each individual admitted, with a view to explain the extreme mildness of some cases,—the danger, unmitigated course, and even death, of others. Small-pox, in the unprotected, remains as virulent as it ever was. Vaccination, when performed in infancy, affords almost complete security against the fatality of small-pox, up to the period of puberty; and the general experience of the Small-pox Hospital shows that small-pox did not usually occur after vaccination,

until several years had elapsed. The most trustworthy evidence of the perfection of vaccination was to be obtained from the cicatrices.

The analytical series consisted of six tables. Observations on the results accompanied each table; and it appeared that 3,094 patients with small-pox reported themselves to have been vaccinated at some period of their lives. 1,357 had one vaccine cicatrix; and of these, four and a quarter per cent. died with a good cicatrix, and twelve per cent. with an indifferent cicatrix: mean, seven a half per cent. 888 had two cicatrices; two and a half per cent. died with good cicatrices, seven and a quarter with indifferent cicatrices: mean mortality, four per cent. and a fraction. 274 patients had three cicatrices: average mortality, one and three-quarters. 268 patients had four cicatrices; and there died with good cicatrices under one per cent.; with indifferent cicatrices, none, the average being only three-fourths of one per cent. The author described a good vaccine cicatrix as distinct, foveated, dotted, or indented, in some instances radiated, and having a well, or tolerably well, defined edge: an indifferent cicatrix as indistinct, smooth, without indentation, and with an irregular edge. The author's opportunities of examining the foreigners admitted with small-pox at the hospital, and comparing them with each other, and with the same class of persons in this country, had led him to the conclusion that vaccination was performed in the best manner generally by the Danes, Swedes, Norwegians, and Germans. Then came the Italians; and, from the few he had seen, the Spaniards; then the Scotch; then the Irish; and, lastly, the English and French. There must exist some grave and lamentable evils (more especially affecting the humbler classes) connected with the circumstances under which vaccination in country districts was performed. There could be no justifiable reason why the rural inhabitants of England and Wales should be less well vaccinated than the rural inhabitants of Denmark, Sweden, and Prussia. The mortality, severe as it was between the indifferently and the well vaccinated, was not the only evil result of bad vaccination. Proportionate to the mortality was the severity of the disease; and, to those who escaped death, there was damaged health, disfigurement for life perhaps, and undeserved discredit was brought on vaccination. Great judgment and caution should be exercised in the selection of vaccine lymph. Lymph for use was in its best state on the seventh day of the progress of the vesicle, the day week from the vaccination.

The author's conclusions were—

1st. That natural small-pox destroyed about one-third of all whom it attacked.

2nd. That small-pox after small-pox was of comparatively rare occurrence; that a second attack of natural small-pox was rare, but not often fatal, and that protection seemed to be the law. That after inoculated small-pox, an attack of small-pox had more frequently led to fatal results; but there is reason to presume that the virus used for inoculation, like a great deal of the lymph used at the present day for vaccination, was often taken at too advanced a period of the disease, and thus did not afford the full measure of protection it was capable of affording if taken at a proper time.

3rd. That vaccination performed in infancy afforded almost complete

protection against the fatality of small-pox, to the period of puberty; that a variety of circumstances conspired to make it almost impossible to ascertain exactly in what proportion to the vaccinated cases of small-pox subsequently occurred, or might occur, if all persons lived to an advanced age.

4th. That, as a matter of safety, it would be well for all persons who were vaccinated in infancy to be revaccinated at puberty; this measure being more especially requisite for those who were either indifferently or doubtfully vaccinated in infancy, and still more necessary for those who, though vaccinated, had no cicatrix remaining. Finally, as a matter of precaution, it would be desirable that all persons should be re-vaccinated, on small-pox existing in the house where they were residing.

Mr. Streeter would suggest the necessity of attending to the health of the skin before vaccination was performed. He believed that the exhausted state of the skin in tropical climates was one cause of the imperfect vaccination in them. About thirty years ago, in the practice with which he was connected, out of more than a hundred children who had been vaccinated, not one half returned to show the arm and the effects of the operation. He had only seen one fatal case of small-pox after vaccination, on the fifth day. He alluded to one source of danger in cases of small-pox—namely, a profuse flow of the catamenia, which occasionally occurred in the secondary fever.

Dr. Webster entirely concurred with the opinion stated, respecting the great fatality of small-pox among young people, compared with those in more advanced life. For instance, during 1847, when upwards of 4,200 persons died by variola throughout England and Wales, more than three-fourths were under five years of age—the sexes being equally divided; while very few had passed their forty-fifth year. Again, the fact that death very rarely occurred in cases where the individual had been properly vaccinated in three or four places at the same time, was likewise most important, and showed, if the system was once properly imbued with true vaccine virus, little danger of subsequent small-pox need be apprehended. In his (Dr. Webster's) opinion, many of the deaths reported from variola, after cow-pox, occurred where the party never had been correctly vaccinated, especially throughout rural districts and country towns, where numbers re ain unprotected, owing to the prejudices prevailing in ignorant minds against vaccination, who obstinately object to the operation, "as an impious attempt to arrest the will of the Almighty."

Dr. Chowne, having been a frequent visitor at the Small-Pox Hospital, could corroborate many of the statements made in the paper. The fact mentioned in the paper, of the number of persons affected with small-pox after vaccination in the country, was most important. The failure of vaccination in country districts was most lamentable; but it was not the fault of the practitioners—it was the fault of the Boards of Guardians, of the Government, by whom no efficient arrangements for vaccination were made, and consequently thousands lost their lives.

Mr. Marson said that, much of his paper being tabular, it could not be heard before the Society. He wished, however, just briefly to allude to the number and quality of cicatrices. The difference observed was

remarkable. Thus, amongst the persons who had only been vaccinated in one place, and the cicatrix was imperfect, twenty per cent. took the small-pox; whereas, when there were four cicatrices, and these were good, the number who took small-pox after vaccination was only one per cent. The medical public had relied upon the circumstance of Jenner having at one time vaccinated in only one place; but he (Mr. Marson) knew that Jenner did not confine himself to one, for he had seen a patient whom Jenner had vaccinated in 1806, and the person had four cicatrices.—*Assoc. Med. Jour.*

Gallic Acid in the Treatment of Purpura Hæmorrhagica. By T. P. J. Grantham, Esq.—Some years ago I lost one very dear to me from purpura hæmorrhagica; and my attention was thereby strongly directed to that disease, with the hope of discovering some more satisfactory mode of treatment.

The value of gallic acid in passive hæmorrhages induced me to give it a trial in purpura hæmorrhagica, and the results obtained were very gratifying. Moreover, its safety, promptness, and pleasantness, are no inconsiderable recommendations of this remedy.

If the reader should not find any novelty in the application of gallic acid to this disease, the subjoined cases will at least confirm, as far as they go, the value of the treatment.

Case I. Mr. E., a farmer and miller, aged sixty years, came under treatment on the 18th November, 1852. Two days previously, he had noticed a soreness of the tongue, and perceived that the saliva was bloody. The symptoms of purpura were well marked. The gums were spongy, and they bled freely. The tongue and the buccal mucous membrane were dotted with purple fungoid excrescences, some of which were as large as split peas, and from them blood oozed. The breath was offensive, and the appetite was impaired. The urine contained a considerable quantity of blood. Petechiæ were scattered over the thoracic and dorsal regions; and there was a large ecchymosis on one arm, and another on one of the thighs. The gallic acid was administered in five-grain doses every three hours, and two compound rhubarb pills were given at bedtime. On the 20th, the purple excrescences had shrunken and ceased to bleed; the petechiæ and ecchymosis had faded; and the urine was free from blood. On the 30th, the improvement had been sustained. He was quite well again. He said that the first dose of medicine seemed to do him good. Only four scruples were taken.

Case II. This was a more serious case, several days having elapsed from the first setting in of hæmorrhage from the nose before the patient came under my care. Master C., aged sixteen years, a draper's apprentice, was seen by me on the 21st June, 1853. He was greatly exhausted and blanched from epistaxis, hæmoptysis, malæna, hæmaturia, petechiæ, and ecchymosis. He was immediately ordered to take gallic acid in doses of three grains every three hours, and subsequently in five-grain doses every two hours. The pil. rhei comp. was given as an aperient. The treatment was followed by most marked benefit, and before a week had elapsed, all hæmorrhage had ceased. On the fifth July, a slight recurrence of epistaxis happened, owing to his having too soon resumed

active exercise. But the bleeding was quickly checked by a few doses of the acid, and complete convalescence speedily followed.

Case III. H. B., aged 12 years, son of an agricultural laborer, after three weeks' illness from typhus, then prevalent in the village where he resided, was seized on the 16th August, 1853, with hæmorrhage from the nose, gums, and bowels. The tongue was dotted with purple spots, and the back sprinkled with numerous small petechiæ. The treatment adopted was the same as in the former cases. On the 17th, hæmaturia was superadded to the other symptoms, which were very severe. On the 18th, the hæmorrhages began to abate. On the 20th, the spots on the tongue and the petechiæ had faded; the hæmorrhages had nearly stayed. On the 21st, a severe return of epistaxis occurred, from picking his nose. This was followed by alarming prostration of strength. He was ordered to take the acid every hour, and to have his nose plugged. On the 22d, all bleeding had ceased. On the 30th, I found that there had been steady and daily improvement since last report. On the 31st he was convalescent.

This was a severe case, as the patient's strength had been so much reduced by a previous exhausting disease; and, accordingly, it was necessary to push the acid to a considerable extent.

In all the cases the dietetic and general management were carefully attended to.—*Assoc. Med. Journal.*

Bromo-Iodides in the Treatment of Insanity.—Dr. Lunier, chief physician of the lunatic hospital at Niorte, is convinced that the bromo-iodides are useful in the treatment of mental alienation, and that they may often be substituted advantageously for cod-liver oil. From many formulæ recommended by Dr. Lunier, we select the following:

℞ Potassii iodidi gr. xxxvj.
Potassii bromidi gr. xxv.
Pulveris radicis gentianæ ℈ij.
Artemisiæ syrupi q. s. ut fiat massa, in pilulas lx. dividenda.
S. A pill thrice daily.

℞ Ferri iodidi gr. xxxvj.
Ferri bromidi gr. xxv.
Pulveris radicis gentianæ ℈ij.
Syrupi corticis aurantii q. s. ut fiat massa, in pilulas lx. dividenda.

℞ Potassii iodidi gr. xij.
Potassii bromidi gr. viij.
Extracti gentianæ ℈j.
Aquæ destillatæ ℥viij. Fiat solutio.
S. A tablespoonful thrice daily.

This solution can be given in the food, if care is taken to avoid aliments containing starch.—*Annales Medico-Psychologiques.*

External Use of Ipecacuanha.—M. Delioux (*Bulletin de Thérapeutique*) speaks highly of the external employment of ipecac. in the form of an ointment, as having the same virtues as the tartar emetic ointment, without any of its inconveniences. Soon after its application, an eruption appears of small elevated papules, of a bright red color, often confluent; afterwards they become true pustules, of small size, and umbilicated, but attended with little pain, and quickly drying up, without leaving a cicatrix. Unguent. ipecac. should be preferred to that of tart. emetic, in diseases of children, as it causes less pain; in diseases of females; and upon exposed surfaces, where we wish to avoid cicatrices. The following is M. Delioux's formula for preparing the ointment:—℞. Pulv. Ipecac., one part; olive oil, one part; axunge, two parts; or the powdered ipecac. may be sprinkled upon a pitch plaster, and be thus applied.

OBITUARY.

Death of Bransby B. Cooper, Esq.—The death of this distinguished surgeon occurred on the 18th of August last. Mr. Cooper, says the *Association Journal*, had for some time been laboring under illness, but had partially recovered. He was crossing the hall of the Athenæum Club, when he stopped and called for a glass of water; before this could be brought, blood spouted from his mouth, he fell, and was almost instantly a corpse. The following account of the post-mortem examination of the body is taken from the *Medical Times*:

"It was made in the presence of Messrs. J. Birkett and Alfred Poland, August 20th, 1853, at 8 A. M., about forty-one hours after death.

At the root of the tongue, and most on its right side, was a deep excavation, covered over by the cortex of the organ, which seemed to form flaps to the hollow. Around this excavation, the tissues of the tongue itself, as well as the muscles about the os hyoides, were infiltrated with the elements of carcinoma.

Several enlarged lymphatic glands existed upon the right side of the neck, all infiltrated with carcinoma. From one large gland, and from another smaller, when cut, a yellow, tenacious, muco-purulent fluid came away. The parietes enclosing this fluid was carcinoma.

The trachea and bronchi contained fluid blood, as well as the air cells of the lungs, and patches of cells, infiltrated with blood, appeared upon the surfaces of both the lungs. The tissue of the lungs was healthy, and not a single pleural adhesion existed on either side.

The heart was small, and its muscular tissue thin and pale. The valves were healthy. The stomach contained imperfectly masticated food, and much blood-colored fluid. The tissues of the alimentary canal were healthy. The liver was rather small, soft, and congested with blood. The pancreas was not diseased. The spleen was extremely contracted and corrugated, and of a dark, almost black, hue.

Both kidneys were congested with blood, soft, and easily separable from their proper tunics.

In the cavity which existed in the tongue there were a few clots of blood, and as this was the only ulcerated surface, it may be presumed that the hæmorrhage proceeded from a perforation in the right lingual artery, or of one of its branches."

PART FOURTH.

AMERICAN MEDICAL RETROSPECT.

SURGERY.

Conclusions on the Value of Surgical Operations in Cancerous Diseases. By Prof. S. D. Gross, M.D.—From the facts and statements which have now been presented, embracing the opinions of many of the most intelligent, experienced, and distinguished practitioners in different ages, and in different parts of the world, the following conclusions may be legitimately deduced:

First.—That cancerous affections, particularly those of the mammary gland, have always, with a few rare exceptions, been regarded by practitioners as incurable by the knife and escharotics. This opinion, commencing with Hippocrates, the father of medicine, has prevailed from the earliest records of the profession to the present moment. Nature never cures a disease of the kind; nor can this be effected by any medicine or internal remedies known to the profession.

Secondly.—That excision, however early and thoroughly executed, is nearly always, in genuine cancer, followed by relapse, at a period varying from a few weeks to several months from the time of the operation.

Thirdly.—That nearly all practitioners, from the time of Hippocrates to the present day, have been and are still averse to any operation for the removal of cancerous tumors, after the establishment of ulceration, rapid growth, firm adhesion, organic change in the skin, lymphatic invasion, the cancerous dyscracy, or serious constitutional derangements, on the ground that, if had recourse to, under these circumstances, the malady almost inevitably recurs in a very short time, and frequently destroys the patient more rapidly than when it is permitted to pursue its own course.

Fourthly.—That in all cases of *acute* carcinoma, or, in other words, in all cases of this disease, attended with very rapid development and great bulk of the tumor, extirpation is improper and unjustifiable, inasmuch as it will only tend to expedite the fatal result, which, under such circumstances, always takes place in a very short time.

Fifthly.—That all operations performed for the removal of encephaloid cancer and its different varieties, are more certainly followed by rapid relapse than operations performed upon scirrhus or hard cancer.

Sixthly.—That in nearly all the operations for cancerous diseases, hitherto reported, the history has been imperfectly presented, being deficient in the details which are necessary to a complete and thorough understanding of the subject in each case. This remark is particularly true in reference to the diagnosis of the malady, the minute examination of the morbid structure, and the history of the case after the operation, as to the period of relapse, the time and nature of the patient's death, and the result of the post-mortem examination.

Seventhly.—That cancerous affections of the lip and skin, now usually described under the name of cancroid diseases, are less liable to relapse after extirpation than genuine cancerous maladies, or those which are characterized by the existence of the true cancer-cell and cancer-juice.

Eighthly.—That, although practitioners have always been aware, from the earliest professional records, of the great liability of cancer to relapse after extirpation, a great majority of them have always been, and still are, in favor of operation in the early stage of the disease, especially in scirrhus, before the tumor has made much progress, or before there is any disease of the lymphatic ganglions, or evidence of the cancerous cachexy.

Ninthly.—That many cases of tumors, especially tumors of the breast and testicle, supposed to be cancerous, are in reality not cancerous, but of a benign character, and consequently, readily curable by ablation, whether effected by the knife or by escharotics. It is to this circumstance that we must ascribe the astonishing success which is said to have attended the practice of Hill of Scotland, Nooth of England, and Flajani of Italy.

Tenthly.—That all operators insist upon the most thorough excision possible; removing not merely the diseased mass, but also a portion of the surrounding and apparently healthy tissues, as well as all enlarged and indurated ganglions.

Eleventhly.—That the practice has always prevailed and still obtains, to save, if possible, a sufficient amount of healthy integument to cover the wound, and to unite, if possible, the wound by the first intention; on the ground that these precautions will tend much to retard, if not to prevent, a recurrence of the disease.

Twelfthly.—That much stress is laid by writers upon a properly regulated diet, and attention to the bowels and secretions after operation, as means of retarding and preventing relapse.

Thirteenthly.—That there is no remedy, medicine, or method of treatment which has the power, so far as we are enabled to judge of its virtues, of preventing the reproduction of the morbid action after operation, no matter how early or how thoroughly it may be performed.

Fourteenthly.—That life has occasionally been prolonged and even saved by operation after relapse, as in some of the remarkable cases mentioned in a previous part of this report; but that, as a general rule, such a procedure is as incompetent to effect a permanent cure as a first extirpation.

Philosophy of Certain Dislocations of the Hip and Shoulder and their Reduction. By M. Gunn, M. D., Professor of Surgery in the University of Michigan.—The views here advanced I have taught for the

past two years to the gentlemen composing the Medical Class in the University; and I shall offer no apology for calling attention to the subject of Dislocations of the Hip and Shoulder, and more particularly to that form of the accident which, from the anatomical peculiarities of the joint, is one exceedingly difficult to reduce; and for the reduction of which Dr. Reid has but recently proposed a novel and efficient mode.

It is not my intention to discuss the question of priority which has been raised in reference to this subject, for there can be no doubt that Dr. Reid arrived at his conclusions by a course of reasoning and experiment; and that those conclusions were most essentially novel to a large majority of the profession. I propose, rather, briefly to consider the prominent peculiarities of the joint, and the relation of the parts in a state of dislocation; the structures which oppose the return of the head of the femur to the acetabulum; the manner in which Dr. Reid's manipulations overcome this opposition; and lastly, the application of the principle involved to the reduction of some other dislocations.

The encircling ridge, which gives depth to the cotyloid cavity, presents upon its outer slope a plane, the inclination of which varies in different parts. At its posterior portion this inclination is very great, and it would seem, in dislocation in this direction, impossible to return the head of the bone to the cavity without lifting it completely over the ridge; upwards and backwards it is more gradual, and would seem to afford a much more easily surmountable obstacle; yet, when we examine the relation of the parts in a dislocation in this direction, we find that applied to this surface we have the anterior and inferior surface of the head and neck of the femur, the rotundity of the head corresponding with the curvature of the slope, while the edge of the acetabulum corresponds with the curvature described by the anterior and inferior surface of the neck. Although thus seemingly locked together, comparatively slight extension in the line of dislocation would cause the head to ride over the edge of the cavity, were it not bound down in this position by the surrounding tissues. Which particular tissue constitutes these bands is an important question to him who seeks to relax them. Dr. Reid, in common with the profession generally, considers the muscles the agents which thus oppose our efforts at reduction, and his manipulations are conducted with a view to relax them, while, the femur acting as a lever, the head of the bone is raised clear of the edge of the cavity. With this same view we have the directions of the books and public teachers to apply extension and counter-extension *slowly* and *uniformly*, in order to *tire out* the rebellious muscles. Blood-letting, antimony, and the hot bath, are also called in to aid in this laudable crusade against these wicked organs.

In this view, I would respectfully differ with Dr. Reid, the teachers, books, and profession, and state my honest belief that the muscles oppose our efforts very little more than they do the progress of our earth in its orbit. This belief I have repeatedly verified by experiments upon the dead subject, and the members of the medical class of 1851–2 in the University will remember those conducted before them. A subject was placed upon the table, the lower border of the gluteus maximus was raised, and a scalpel carried through the subjacent muscles, and an opening made in the posterior and superior portion of the capsular ligament.

The round ligament was then divided, and the head of the femur luxated upon the dorsum of the ilium. The usual indications of this dislocation were present. The subject was placed in the proper position, a counter-extending band applied to the perinæum and fixed; the strength of two men exerted now upon the extending band, while endeavor was made to raise the head of the bone clear of the acetabulum with a jack towel, was insufficient to reduce the luxation. Reid's method of manipulation readily replaced the bone. This experiment was repeated many times, and uniformly with the same result. As *muscular action* could not have opposed our efforts and prevented success in this case, the question naturally presents itself, what structure stood between effort and success? I answer, *the untorn portion of the capsular ligament.* In support of this view, let us consider for a moment the position of the limb at the instant of escape of the head from the socket during the process of dislocation. To do this we must bear in mind that force applied to the knee or foot while the limb is in a state of adduction, constitutes the most frequent cause of this dislocation. Force thus applied adducts the limb still more powerfully before dislocation takes place, and at the moment of the escape of the head of the bone from the socket the limb is in a direction which crosses the thigh of the opposite side. Immediately that the head of the bone has cleared the edge of the acetabulum, it settles into its position upon the dorsum of the ilium, and the limb assumes the position and direction indicative of the accident. During the dislodgment of the bone, the superior and posterior portion of the capsular ligament is ruptured, through which the head protrudes; while, from the position of the limb at the instant of protrusion, the anterior and inferior portion is very much relaxed, thus allowing the head to ride easily over the acetabulum. As soon as the head settles into its position upon the dorsum of the ilium, the direction of the limb is changed, and the untorn portion of the ligament becomes more tense, and for this reason the head of the bone cannot be readily returned to its place, till the limb is again placed in a position to relax it. Dr. Reid's method does this most effectually, and I conceive that any other plan which does not accomplish this, as, for instance, extension and counter-extension by the pulley, or Jarvis' apparatus, in the usual direction, succeeds only by lacerating much more extensively, if not by actually tearing the ligament completely asunder, before the head of the bone will ride over the edge of the cavity.

The principle, then, I would seek to establish, is this—*that in luxations of the hip and shoulder, the untorn portion of the capsular ligament, by binding down the head of the dislocated bone, prevents its ready return over the edge of the cavity to its place in the socket; and that this return can be easily effected by putting the limb in such a position as will effectually approximate the two points of attachment of that portion of the ligament which remains untorn.*

This principle can be successfully applied to the reduction of the backward luxation of the femur into the ischictic notch, and also to the several luxations of the shoulder. It has several times been my guide in the reduction of the downward dislocation of the humerus into the axilla. The patient is seated upon the floor, an assistant slowly raises the arm to an angle of forty-five degrees to the plane upon which the patient is sitting;

and now, while the assistant makes extension in this direction, the surgeon makes pressure with the hand upon the top of the shoulder, the bone readily returns to its place, and the arm is dropped to the side and secured in a sling.

White's method of reducing this luxation, which is figured in Druitt, is essentially the same, the only difference being in the position of the patient. According to his plan the patient lies upon his back, the scapule is fixed by a counter-extending band applied to the top of the shoulder, or by the hand of an assistant, while 'the arm is raised from the side, and drawn straight up by the head, till the bone is thus elevated into the socket.' In either method it will be seen that the upper and untorn portion of the capsular ligament, by the elevation of the arm is very much relaxed, thus giving a latitude of motion to the head which greatly facilitates its return, and which could not be obtained by any manipulation in which this relaxation was less perfect. Nine-tenths of the force spent in extension and counter-extension may be spared, in the reduction of all those dislocations in which, by alteration of the position of the limb, such relaxation is effected; and in the several luxations above specified this end is undoubtedly attainable.

On the Treatment of Tape-worm by the Oil of Pumpkin-seeds. By Prof. Henry S. Patterson, M.D.—In the *Medical Examiner* for October, 1852, I reported a case of radical cure of tænia by the use of an emulsion of pumpkin-seeds, after the Ol. Terebinth, and even Kousso, had signally failed. Several other cases have been reported, both before and since mine, all going to establish the efficacy of this new remedy. Should it prove as generally successful in expelling the worm as the cases indicate, it will become a valuable accession to our means of treatment in a troublesome and often obstinate affection.

The seeds of the common pumpkin (*cucurbita pepo*) consist of a leathery white envelope, enclosing an oily albumen of a slightly greenish tinge. They are inodorous, and have a sweetish, mucilaginous taste. Rubbed up with warm water or milk, and sweetened, they form a very pleasant emulsion; and this is the way in which they have generally been administered. They abound in fixed oil, which is readily yielded on expression, and appears to be the only constituent of any importance. Conceiving this oil to be the anthelmintic principle, I determined to use it in the first case of tænia I should encounter. A quantity was obtained, by cold expression, by our accomplished pharmaceutist, Mr. Frederick L. John, of Race-street. From four lbs. of the seeds he procured ℥xiv of oil, but he has no doubt that, if the operation were conducted on a larger scale and more carefully, the yield would be from thirty to forty per cent. The oil is clear, transparent, of a light brownish green color, with a slight oily odor, and a perfectly bland taste, like that of the oil of sweet almonds. It has now been kept some ten months (in well-stoppered bottles), and is perfectly sweet and bland.

No case of tænia has occurred in my own practice, but in May last I learned from Mr. Jno. C. Lyons, an intelligent member of the medical

class of Pennsylvania College, that a poor woman in his neighborhood (Kensington) labored under the disease, and had asked his advice. I requested him to use the pumpkin-seed oil, which he did, and with the happiest result. Causing her to fast rigidly for twenty-four hours, he gave her ℥ss of the oil in the morning, and in about two hours ℥ss more. This produced a slight disposition to looseness of the bowels. In two hours after the last dose, ℥i of castor-oil was given, and purged freely, bringing away a considerable quantity of the worm. From that period until the present (September), she has remained entirely free from every symptom of verminous irritation, and there can be no doubt that the worm was altogether destroyed.

Tænia is of so rare occurrence with us, that no individual practitioner sees enough of it to enable him alone fairly to test any medicine. I therefore beg leave to call the attention of my medical brethren to a remedy readily obtained, cheap and pleasant, and which I believe will be found quite efficient.—*Med. Exam.*

Clinical Observations on the Surgical Diseases of Childhood and Early Life. By JOHN WATSON, M.D., Surgeon to the New-York Hospital.—It has often been matter of surprise to me, that amid the numerous divisions to which the domain of surgery is at the present day subjected, we have no recognized department for the *Surgical Diseases of Children.* The industrial instinct of modern practitioners is proverbial; it shows itself in almost every conceivable form; it attaches itself to almost every department of the profession, and evinces astonishing ingenuity in striking out new paths to notoriety and wealth; and hence the wonder, that it should, up to the present moment, have wholly overlooked so promising a field as the *Surgical Pathology of Childhood.*

But, to say no more of our industrious specialists, the department of surgery to which I refer is worthy of serious attention; the more so from the fact that, as yet, it has never been thoroughly studied. I cannot refer to a single author who has given it more than a passing notice.

We are all aware that the plastic and growing frame of children is in many respects different from that of the adult, and liable to many incidental vitiations to which the fully developed frame is no longer subject, or subject only in a much less degree. I propose in the present communication, then, to allude very cursorily to a few of these. Had I time to follow out the subject in all its bearings, it might prove a useful as well as an interesting study. But I must content myself for the present with simply collating a few cases, as clinical illustrations of some of the accidents to which the limbs of children are exposed.

I. *Injuries about the Shoulder, and their Consequences.*

CASE 1. Jane E. Sharp, a child between five and six years old, was brought to me, July 29, 1841, in consequence of a wasting disease of her left arm. She was unable to raise the arm, or to extend it from the body, but had the free use of the hand and fore arm. The whole limb was smaller than the other. The atrophy had extended to the bones as well as to the muscles and other soft tissues, but was most apparent in

the total wasting of the deltoid. The head of the humerus, when the limb was allowed to hang down, would fall from its socket into the axilla; the coracoid process appeared more prominent than natural. The head of humerus could be replaced without difficulty, but it fell out of its place immediately afterwards. The patient was in other respects a healthy child. Her mother informed me, that when the child was about ten months old she had a fall upon the shoulder, and that the arm had been weaker and smaller than the other ever since. She thinks that of late it has grown considerably, and that the child has rather more use of it than formerly. She has used local irritation, passive motion, and other local treatment, without benefit.

Seeing that the humerus could be held in place by a very slight force, I directed the mother to have a spring bandage prepared by quilting a number of spiral suspender-wires into a fold of muslin (this was before the days of the vulcanized india-rubber), and this latter made like a sleeve, which should extend from the elbow to the top of the scapula, to be attached below to the fore-arm, and above to a sort of bodice or jacket. The object of this apparatus was to supply contractile power, in imitation of the muscular power, and in such a way as to draw the humerus upwards, and at the same time give the patient full liberty to move the limb. The result of the treatment I am unable to state. But I may here add, that I advised the spring apparatus in this case from having seen its good effects in a case of partial loss of muscular power in the leg and foot, after a protracted disease of the knee joint. The spring bandage, in this latter instance, supplied the loss of power from wasting of the tibialis anticus and other muscles that serve to flex the foot upon the tibia.

Case 2. On the 23d of September, 1847, a consultation was held at the N. Y. Hospital, in the case of Ann Marr, an Irish girl, aged 17, who had injured her left shoulder by a fall, rather more than five weeks previously. The case had at first been looked upon as one of ordinary laxation into the axilla. But it was soon apparent that no great physical force was necessary to replace the luxated humerus. The slightest effort sufficed to restore it to its natural position; but from wasting of the muscles, and relaxation of the ligaments, the arm, when left alone, dropped down again immediately by its own weight.

The treatment settled upon, was to secure the arm as in fracture of the clavicle, so as to retain the head of the humerus in its position, and, if possible, give the muscles and other tissues about the joint an opportunity to contract to their natural dimensions. This treatment, with the addition of stimulating embrocations, was continued till the 15th of November, when electro-magnetism was applied, and afterwards repeated daily until about the 23d of December, when the patient was able to raise the arm to her head. But as yet she has regained little or no power in her fingers; for these appear to have been enfeebled, if not paralyzed, from the first, probably in consequence of some injury to the axillary plexus at the time of the fall. She continued in this state until the 18th of January, 1848, when she left the institution, with little prospect of any further improvement.

Case 3. A boy, aged 4, the son of Mr. M., was brought to me from

the country, August 27, 1853, who, about five weeks previously, had received some injury in the neighborhood of the right shoulder-joint. A day or two before he began to complain, the nurse had taken him on a long excursion, and is supposed to have dragged him by the arm; for, on his return, he was exceedingly exhausted, and complained for some days of his shoulder hurting him. On examination, his mother detected considerable swelling, heat, and tenderness over the back of the scapula; and, in a few days afterwards, as the pain and tumefaction subsided, it was found that the child had lost the use of the arm, though still retaining the power of moving the fore-arm and hand. When brought to me, there was no tenderness about the joint, the head of the humerus had not yet quite escaped from the glenoid cavity; but the deltoid was reduced to a mere shred; the muscles of the arm, fore-arm and hand, were all wasted and flaccid; and the head of the humerus hung loose in its socket, as if just ready to drop out of it. There is a sense of roughness and grating produced by pushing up the head of the bone and rotating it within the glenoid cavity. The arm hangs useless by the side, except when lifted by the opposite hand. But he has considerable use of the fore-arm and hand, and is entirely free from tenderness and pain about the injured joint. I advised a supporting bandage for keeping the head of the bone in place, stimulating embrocations, and an ammoniacum plaster over the top of the shoulder. The case is still in progress. I intend, as soon as I am satisfied that there is no latent inflammation about the joint, to resort to the galvanic battery.

Cases somewhat analogous to the foregoing now and then occur in grown persons, and in them are usually looked upon as paralysis of the deltoid. But the peculiarity of the disease as incident to children is, that it arrests the development of the limb more or less completely, and allows the head of the humerus to escape very soon from its socket; whilst in the adult, the wasting is principally confined to the deltoid muscles, or at furthest, to the soft tissues, and the head of the bone is not so apt to suffer spontaneous luxation. The two following are instances of the affection in adults.

Case 4. J. L. Wellington, aged 32, seaman, a native of Massachusetts, was admitted into the Hospital, Sept. 30, 1843, with lameness of the right shoulder of three weeks standing, without any previous sensible injury, except, perhaps, by over-exertion during a gale of wind at sea. The patient's rest is disturbed by a constant dull, heavy pain, which is increased by pressure over the region of the deltoid muscle. But the joint is without other evidences of inflammation. The arm can be moved backwards and forwards, but cannot be elevated without assistance. The deltoid muscle appears to have lost its power of contraction. The general health is good.

The treatment was by anodyne embrocations, followed by blisters, by the local abstraction of blood, by tartar-emetic ointment, and finally, by electricity. His general health appeared, for a time, to have failed; but, under the use of cathartics and bitter infusion, this was again restored. He left the hospital, Dec. 26, 1843, after using the electricity for about a fortnight, evidently much improved by it, and gradually regaining the use of the limb.

Case 5. Simon Ramm, aged 26, an athletic German seaman, in rugged general health, was admitted January 12th, 1846, with partial loss of motion in his left arm. The loss of power had come on very gradually, and was first perceptible within two months of the time of his admission. He enjoyed the use of the fore-arm and hand, but could not raise his arm freely from his body, nor elevate the shoulder. The only apparent lesion in the configuration of the limb was atrophy of the deltoid. This muscle was soft and flabby, and reduced to about one-third of its natural size. The patient was not aware of ever having injured the limb. Passive motion gives no uneasiness, and there are no evidences of inflammation in the joint.

The case was treated by passing galvanic shocks daily through the limb, by blisters, and by stimulating embrocations, for about six weeks, without much benefit. At the close of this period the relaxation of the parts about the shoulder joint had rather increased than diminished; and now, for the first time, I detected roughness and sensation of grating, attended with a dull sound within the joint, whenever I attempted to work the head of the humerus within its cavity; still, there was no pain or other sign of inflammation. The patient, at the time of leaving the hospital, March 31st, was as little able to use the arm as at the date of admission.

II. *Injuries at and below the Elbow.*

Case 6. The first instance that I remember to have met with of loss of power over the muscles of the forearm, as the result of injury in the neighborhood of the elbow, was in the daughter of Mrs. J., then a child of four or five years old, but now arrived at womanhood; she had been playing behind a Venetian door. In pushing her hand and forearm as far as the elbow between the lattice-work of the door, by some accident the limb became twisted in this position, and so injured that in a few days it was found that she had no longer any use of the hand. The forearm became much wasted, and smaller than the other, and continued thus for several months. Frictions, the carrying of a weight in the hand, and other modes of local treatment, were advised. The loss of power continued long after I ceased to have observation of the case. But in course of time, I believe, the child outgrew the injury. I have seen her within a year or two, and I do not know that the arm once injured is at present less useful than the other.

Case 7. Mary Hays, aged twenty months, born in New-York, was brought to the hospital, December 21st, 1843, with an injury near the elbow, caused four days previous by having the limb suddenly wrenched by the mother in attempting to lift her. The whole arm, at the date of admission, was too much swollen to make out very clearly the exact nature of the accident. But by proper position of the limb on a pillow, and the use of an evaporating lotion, the swelling gradually subsided; and on the 1st of January it was apparent that the shaft of the humerus had been separated from its cartilaginous expansion at the condyles near the elbow. On the 5th of January, as the tumefaction had dimished, the limb was put up in a paste-board angular splint; and on the 8th of February, the disjoined condyles having again become attached to the

shaft of the bone, the case was discharged. How far the use of the forearm was permanently impaired in this instance, I had no opportunity of observing.

The loss of power of the forearm, in such injuries as I have now alluded to, is, perhaps, mainly owing to direct injury to the muscles; but there is reason to believe that the nerves are occasionally involved in the primary shock. Thus, I have on several occasions known the pressure of a circular roller near the elbow, in attempts to reduce a luxated humerus, lead to paralysis, more or less persisting in the muscles of the forearm and hand. A similar instance I have above stated, from injury to the shoulder; and I remember the case of a Swedish woman, who, in consequence of a luxation at the shoulder, which had for two years remained unreduced, was totally deprived of the use of the hand and forearm. In these cases the loss of muscular power coexisted with atrophy and diminished temperature.

III. *Injuries about the Knee, leading to Separation of the Lower Epiphysis of the Femur.*

I must here for the present pass over most that relates to diseases of the joints proper, and confine myself to accidents producing results similar to those already noticed in the upper extremity.

Case 8. August 29th, 1840, a consultation was held on the case of a lad aged about 16, of scrofulous diathesis, who had been brought to the hospital from the country about three weeks previously, in a state of extreme exhaustion, with high constitutional disturbance, and colliquative diarrhœa; the result of acute inflammation in the neighborhood of the left knee.

About two months previous to admission, he had been suddenly seized with severe pain around the knee-joint, and extending along the the thigh. The disease soon progressed to suppuration—to ulceration of the integuments, and great tumefaction of the whole thigh. The integument had given way just above the knee, and the lower extremity of the femur appeared to be projecting through the ulcerated opening. An extensive sinus undermined the integument, and ran upwards nearly to the trochanter major. The purulent discharge was immense. The patient, since his admission, had been on the use of tonics and anodyne. The diarrhœa and febrile symptoms had, in some measure, abated; but the state of the weather, and exposure of the ulcerated surface, had led to the generation of maggots in the cavity of the abscess; and confinement to bed had given rise to ulceration of the skin behind the sacrum and trochanters. It was deemed advisable to remove the limb as high up as possible in the shaft of the femur, so as to avoid the track of the abscess. The operation was by the double-flap at about eight inches below the hip joint, and was performed by one of my colleagues. The abscess had extended two or three inches above the line of incision. After the removal of the limb, it was evident that the projection of bone through the opening near the knee, which appeared like the lower expansion of the femur, was, in fact, the expanding portion of the shaft, separated from the epiphysis, which was still in state of cartilage, and attached by the usual ligaments to the upper head of the tibia. The

cartilaginous lining of the knee joint was found almost wholly eroded. The head of the tibia, as well as lower part of the femur, was carious; and the whole shaft of the femur had been much softened by the inflammatory process. The case resulted fatally.

An instance somewhat similar to the foregoing, which terminated fatally in less than a month, I heard of recently, as having occurred near Pittsfield, rather more than a year since. The patient was under homœopathic treatment; and the child had the benefit of "wearing out," as the attendants gravely informed the parents, "rather than of dying from the agency of medicine."

A case nearly similar to the one above stated, I remember to have seen in the hospital as long ago as 1837 ar 1838. The shaft of the femur was seen projecting through an ulcerated opening in the lower part of the thigh. The epiphysis, separated from the shaft, was still attached to the tibia by the capsular and other ligaments. The limb was amputated; and, if I remember rightly, the lad ultimately recovered his health. The following appears also to have been an instance of the same disease:

Case 9. Thomas Brainard, an Irish boy, aged 14, was admitted, April 7th, 1845, with diffuse abscess of the left thigh and leg, the result of a misstep and sudden wrench of the knee in ascending a flight of stairs, which happened four weeks previously. The injury had been allowed to progress without treatment until the bursting of the abscess on the inner side of the leg, which occurred some ten days after the injury. Subsequent to admission, other openings were made for the free discharge of matter. The injury of soft parts, however, was so rapid, and the constitutional disturbance so threatening, that on the 19th of April, it was deemed proper to remove the limb. This was done by one of my colleagues. In the hospital registry I find no note of the condition of the parts about the knee after the amputation. I find, however, in my own memoranda, that the case proved to be one of separation of the epiphysis of the femur from the shaft, simulating a luxation at the knee-joint. For some days after the operation, the stump progressed favorably; but notwithstanding a supporting course of treatment, the general condition became less satisfactory. Hectic fever and colliquative diarrhœa, alternating with profuse perspiration, gradually exhausted the patient, who fell into a comatose condition, and died in a convulsion on the 6th of May.

As in many analogous cases of exhaustion with profuse suppuration, evidences of pleuro-pneumonia were detected after death. The right lung was found to consist of only two lobes. There were three small abscesses in the lower lobe, with some inflammatory effusions in the cavity of the pleura. The left lung was healthy. There were no evidences of phlebitis.

IV. *Injuries leading to Atrophy of the Lower Limb.*

Case 10. The little son of a medical friend, in attempting to imitate his father, by placing his heel against the mantel above the fire-place, gave his hip a severe twist, and for some days afterwards suffered severe pain in the part. But as the pain subsided, the accident led to no serious

apprehension at the time, and had been nearly forgotten, when the boy, at the interval of a few months, began to limp. The case now was carefully watched, and, by several medical men who examined it, pronounced to be incipient disease of the hip-joint. The limb became somewhat less plump and muscular than the other; the hip appeared flattened, and though pressure, applied in various ways so as to be communicated to the joint, gave no decided uneasiness, yet on any severe exercise, or after any disturbance of the digestive organs, the boy would limp considerably, and at times suffered pains like those of rheumatism about the hip and knee. He was affected in this manner at intervals for several years, but the pain would at times shift to the opposite limb. In the mean while, he was subjected to various modes of treatment, local and general, without any decided effect. But as he gradually grew up to adult age, the limb became as well developed as the other, and the limping and pain entirely disappeared. The true pathology of this case has perhaps never been clearly understood. From the first, I felt satisfied that if the joint had been at all affected, it must have been only in a secondary manner, as connected with a sprain among the muscles, and perhaps mostly in those coming from the inner surface of the pelvis to be attached to the inner trochanter. The shifting to the opposite limb would give to the case a rheumatic character, and it is not the only instance in which I have known local injury give rise to a general and severe attack of rheumatism.

Case 11. A sprightly little girl, of about six years old, was brought to me from the country, in October, 1851, in consequence of lameness. Some weeks previously, while ill of a slight fever, she had fallen out of bed, but was not at the time supposed to have suffered any serious injury. On recovering from her fever, however, she was slow in regaining the use of her limbs; and it was, at the end of five or six weeks, found that she had in some degree lost the use of her right leg. The whole of the right leg and thigh appeared to be less fleshy than the other limb—the tissues were less firm, and the circular measurement in every part of the thigh and leg, except over the bony prominences, was considerably less than in the sound limb. The right hip was flaccid, and there appeared to be slight elongation, as in the early stages of morbus coxarius. But the child was free from pain, and no test of pressure could develop any evidence of augmented sensibility in the hip-joint. The case was, thus far, obscure; but under all its aspects, it appeared to me at the time to be one of hip-disease. Under this persuasion, I advised rest in the horizontal position, a systematic course of purging by the use of cream of tartar, and the repeated abstraction of blood, in small quantities at a time, by the application of leeches behind the trochanter major.

I saw the child a second time, on the first of December. The limb was now still more evidently wasted than the sound one, and its temperature in every part was much reduced; but the length of both limbs was alike. The recumbent posture was again recommended, with the addition of electricity and friction to the affected limb, and the internal use of hydriodate of potassa, as an alterative and tonic.

I saw her for the third time, early in the following spring. It was now apparent that the principal wasting of the limb was in the muscles

of the leg, although those of the thigh were less developed than in the other limb. The loss of temperature in the diseased leg was now still more apparent, and its muscles all remarkably flaccid, whilst those of the other limb were plump and solid. The loss of temperature and wasting of the leg below the knee were also accompanied by dropping of the foot from loss of contractile power of the anterior flexor muscles. It was, in short, very evident from the present condition of the limb, that the principal injury had fallen upon the parts below the knee. In order to arrest the atrophy, and restore the symmetry of the two legs so far as to overcome the lameness, I now advised the continuance of the electricity to the affected leg, a roller to be constantly worn on the sound limb, to prevent it from outstripping the other in growth, and the continuance of the recumbent position, as well as of the alterative medicine. This course was faithfully followed for several months, after which the child began gradually to walk about.

I have again heard from her through the family physician, within a few days. He writes to me, on the 13th of Sept., '53, that her general health is good, though the limb below the knee is smaller than the other. It is, however, evidently increased in size since last seen by me. "She walks half a mile to school, romps and plays as though nothing was the matter; yet there is an awkwardness in the use of the leg, which I think," says he, "chiefly arises from stiffness of the ankle-joint. The muscles of the leg are firmer than they were six months since, and I think she will eventually recover their perfect use." He concludes by remarking that "it is certainly an unusual case."

Case 12. A delicate child, from Georgia, a female, two years old, of strumous diathesis, and from parents who had both died of phthisis, was brought to me on the 5th of July, 1843, having then been for several months unable to walk, and extremely unwilling to stand, or even to put the right leg to the ground. I examined her with great care, and could find no difference in the development, plumpness, sensibility, or temperature of the two limbs. The joints were all as supple and flexible as natural. The lameness was unattended with pain, and could not be traced to any known injury. But the child had been mostly entrusted to the care of a negro girl, who might have allowed her to fall, or suffer other injury, without acknowledgment. The case had been considered by the family physician, and others who had examined it in the South, as one of morbus coxarius. I put the child on her back, ordered frequent embrocations with a mixture of one part of tincture of iodine to seven of soap liniment, and the daily internal administration of about five grs. of hydriodate of potassa dissolved in syrup of ginger. This course was still in use on the 31st of August, when I last saw the patient. At this period, it had become evident that the child was suffering from no disease in any of the joints, and that the difficulty lay chiefly in the muscles below the knee. The temperature of this part of the limb was now less than that of the other leg, and there was evident tendency to dropping of the foot, from loss of power in the tiboalis anticus and other of the anterior muscles which serve to flex the foot. The case is still under treatment.

The points most worthy of observation in the cases now related are,

that injury to the limbs of young persons may lead, 1st, to arrested development; and to lameness, more or less permanent, according to the degree of injury inflicted on the muscular structure, on the nerves, or the firmer tissues; and, above all, if in the lower limb, to the subsequent want of growth in the bones: 2d, to severe inflammation around the spongy heads of bones, and separation of the cartilaginous expansions from the more consolidated portions. They further show, that injuries occurring to the limbs of children are often overlooked; and that when they give rise at length to morbid appearances, these latter are often mistaken for those depending on diseases which do not actually exist.

Spirits of Turpentine as an Excitant of Uterine Contractions. By Carthon Archer, M.D.—My attention was first called to the use of the above-mentioned agent, as an efficient means of exciting uterine contractions, when deficient, by an article in the 'London Lancet.' It was there stated that when employed in the form of enema, it had uniformly succeeded, even in cases where the ergot had been previously exhibited without success. Since then, several opportunities have been presented to me of testing its value. In these cases its exhibition so completely answered my expectations as to induce me to submit the following cases, in the hopes of causing a more extensive trial of its efficacy:—

The power of ergot in exciting the contractions of the uterus is so well known, that to many it may appear superfluous to seek for new agents to fulfil that indication. There may be, however, circumstances in which it might be difficult or impossible to procure ergot, or where it had been unsuccessfully administered, that would render it necessary to resort to other remedies. In such cases, an article, generally so easily obtained as the spirits of turpentine, becomes of great value. There are also cases in which ergot, from the peculiar nature of the contractions it excites, may be inadmissible, while an agent, which merely increases the strength and force of the contractions of the uterus, without altering their kind, would produce the happiest effects. It is in cases of this kind I believe the spirits of turpentine to be equally safe and efficacious. Without farther preface, the following cases are submitted:—

Case I.—October 11th, 1851: I was requested to visit Mrs. ———, a spare, delicate lady, in labor with her second child. The pains had been experienced for two days, but had been slight during the whole time, and had ceased entirely at the time I proceeded to make the usual examinations. The os uteri was dilated and dilatable; the head had descended considerably, and was in the first position, and the membranes were still unruptured. Not having any preparation of ergot with me, I determined to test the virtues of the spirits of turpentine. An ounce of the spirits of turpentine, in a sufficient quantity of gruel to suspend it, was immediately ordered to be thrown up the rectum. Labor pains soon returned, and in a short time the patient was safely delivered of a son. Mother and child both did well.

Case II.—February, 1853: I was called to Catherine, a slave, in labor with her sixth child. She had been in labor for some time, and

the membranes had been ruptured in the commencement of labor. Upon making an examination, the foot was found presenting, and the cord prolapsed and pulseless. As the labor pains seemed to be increasing, and the woman doing well, though the child was dead, she was left for the time to the efforts of nature. A few hours after, another examination being made, the labor held out every prospect of terminating without requiring any assistance. The pains, however, soon commenced becoming weak and irregular, and the child being found, upon examination, to have made but little progress, an enema of turpentine was ordered, after which the pains rapidly became stronger, and in a short time she was safely delivered, the child of course being dead —*Stethoscope.*

EDITORIAL AND MISCELLANEA.

Medical Schools of New-York.—The opening of the winter session of the several medical schools of our city took place about the middle of October, with the usual ceremonies. Each school is now in the successful prosecution of its annual course of lectures, with a thoroughly organized faculty, and flattering prospects as regards the size of classes and the advantages for thorough instruction.

Among the important changes which have occurred in the several faculties during the year, we may notice the resignation, by Prof. Clymer, of the chair of Theory and Practice, in the University of New-York, and the appointment of John A. Swett, M.D., to the vacancy; the resignation, by Prof. Whitaker, of the chair of Anatomy in the New-York Medical College, to which Prof. Peaslee has been transferred; and the appointment of Edward H. Parker, M.D., to the chair of Physiology and Pathology vacated by Prof. Peaslee. The faculty of the College of Physicians and Surgeons remains unchanged.

In making this announcement of the opening of the annual session of our colleges, we cannot refrain from calling attention to the superior advantages of New-York for medical teaching. We believe it is unsurpassed at home or abroad in the elements of medical instruction. Its Hospitals, Dispensaries, and Public Charities rival in number, organization, and extent of means, any similar institutions in the world. And all this abundance and variety of material is rendered easily accessible to the student, by teachers of the highest respectability. To the practitioner who may wish to refresh his memory on any or all medical subjects, or the student in pursuit of thorough didactic and clinical instruction, we cordially recommend an attendance at our colleges and hospitals during the approaching winter. The following extract from an editorial in *The Stethoscope and Virginia Medical Gazette*, on *The Medical Advantages of New-York City*, candidly expresses the impressions made upon its accomplished editor during a recent visit to our city. He says:

"The advantages held out by the great commercial metropolis of this continent to the medical student, whether he is an undergraduate or not, do not seem to be appreciated in the South. It is very customary for Southern graduates, before they enter upon their candidacy for practice,

to go to Philadelphia for a double dub of M.D., or to Paris for what they call the "Hospital Advantages." We are quite sure that ignorance of the facilities afforded in the great city of New-York for prosecuting medical studies, even down to the most uncommon specialities, prevents hundreds from annually availing themselves of them. We have had the most ample opportunities of visiting the almost innumerable hospitals, chniques, dispensaries, public and private lecture-rooms, and other places of instruction, and we unhesitatingly declare that New-York city is not only the most extensive theatre for medical study on this continent, but that it affords facilities to the student and to the *rusty* practitioner, hardly excelled by any of the European cities."

Legalizing Dissections. The following remarks on this important subject we copy from the *Buffalo Medical Journal*, and we believe are from the pen of its junior editor. We commend them to our readers, and in doing so, cannot refrain from expressing here the belief, that the urgent calls of humanity and the universal desire of the profession will not much longer be disregarded by our legislators, who, we regret to say, have already allowed the States of Massachusetts and Michigan to place in the background in this matter the enterprise of the EMPIRE STATE:

We suggest that, during the present winter, the profession should unite and demand from their representatives, such a law as will enable them to prosecute the study of anatomy in a legal manner. Were our county societies, at their winter meeting, to make this a matter of discussion, and should they unitedly demand the passage of a bill giving the bodies of those dying in prison and alms-houses, unclaimed by relatives, they would secure a successful issue. The medical profession has within its ranks influence and talent enough to carry such a measure without difficulty, were its strength put forth. And one of the strongest arguments for such a law, would be the fact that it would remove all excuse for those violations of the sanctity of the grave, which occasionally shock the sense of community, and give birth to unjust and injurious suspicions directed toward our whole fraternity. The profession (and we speak not only for the colleges, but for every physician in the study) has a right to this concession. Its public services are unequalled by any other occupation—its public rewards are nothing. We ask for no favoritism, for no endowments. The present law was conceived in an honest, but mistaken spirit, and honest, but mistaken prejudices continue to operate. Probably violations of the present law are not very frequent. Evasions of its letter and spirit are more common. It is an unconscious materialism which maintains this penal statute; and we are confident that a well-directed and energetic appeal to the good sense and patriotism of an intelligent legislature would bring about the change we ask. The profession is at present loaded down by laws antagonistic to its progress and its interests. Let us have some compensation for these in privileges granted, Messrs. Legislators, or the consequences will react upon community. The tyranny and oppression of a class always produce its degradation. Make us freemen in this respect, and a blessing will be conferred, not so much on the profession as on all suffering humanity, which relies on its skill for relief.

Our Leader.—We take pleasure in presenting, in the present number, the very interesting report of Mr. Blodget, the able and indefatigable collator of the material in the Meteorological Department of the Smithsonian Institute, to the Secretary of that institution, Prof. Henry. The facts which he has so perspicuously arranged, relative to the climatic conditions of the past summer, bearing upon the sanatary character of those months which were attended by such fearful mortality in this vicinity, will be duly appreciated by every scientific physician.

We have, on former occasions, called attention to the importance which attaches to the Meteorological Registers of this institution, stationed over the entire country, as affording the most correct means of obtaining data as the basis of reports upon epidemic and other diseases. We are glad of the opportunity which now offers of illustrating that fact. If, at each of these stations, a medical man had noted carefully each day, on a chart properly arranged, the rise, progress, decline, mortality, and peculiarities of the epidemic disease which prevailed at such station, or the prevalence and character of the diseases of the locality, the most complete and reliable system of observation, in regard to the diseases of the country, would have been established. And these means are easy of access; nay, more, the Secretary of the Smithsonian Institution has once offered the material collected from these stations to the American Medical Association for their use; but, strange to say, the generous offer was declined. And yet this Society, with commendable perseverance, annually appoints its committees on epidemics, and in return receives reports so meagre that they admit of scarcely a single deduction. From the large, populous, and highly interesting district, as regards its climatic and sanatary condition, comprising New-England and New-York, no report whatever has yet been made.

We earnestly hope that the attention of these committees will be directed to this subject, and the coöperation of the Smithsonian Institution sought (and we doubt not it may easily be obtained), to facilitate their labors. In this way only, we are satisfied, can the American Medical Association achieve, expeditiously and efficiently, the great object which it has attempted, of obtaining accurate and reliable statistics relative to the sanatary condition of this country.

Dr. Marshall Hall.—The profession of New-York were entertained, on the evenings of the 18th and 20th of October, with lectures by this distinguished Physiologist, at the College of Physicians and Surgeons. The first lecture was devoted to the Anatomy, Physiology, and Pathology of the Nervous System; and the second to the treatment of Convulsive Diseases. The interest manifested in these lectures has never been equalled in this city. The desire was universal to learn, from the lips of the great teacher himself, those lessons relating to the subtile operations of the nervous system which he was first to explain and reduce to method, and which have long been familiar in our text-books. Although the short space of two lectures admitted of but a brief review of a subject to which he has devoted the best energies of his life, yet the learned lecturer did not fail to crowd them with facts

and experiments of the most interesting and satisfactory character. We are pleased to learn that his health is improving, and trust that his visit to this country, so gratifying to the profession, may add greatly to the strength and enjoyment of declining age.

Bellevue Hospital.—Drs. Willard Parker and Wm. H. Van Buren have resigned their respective situations as Surgeons to Bellevue Hospital, which they have held much to the credit of that Institution; and Drs. Lewis A. Sayre and John J. Crane have been duly appointed to the vacancies thus created.

Prize Essay.—American Medical Association.—At a meeting of the Association, held at New-York, in May, 1853, the undersigned were appointed a Committee to receive voluntary communications on medical subjects, and to award two prizes of $100 each, to the authors of the two best essays.

Each communication must be accompanied by a sealed packet, containing the name of the author, which will be opened only in the case of the successful competitors. Unsuccessful communications will be returned on application after June 1st, 1854.

Communications must be addressed, post-paid, to the chairman of the committee, Dr. Charles A. Pope, 123 Locust street, St. Louis, Mo., on or before the 30th of March, 1854.

Charles A. Pope, M.D., Thomas Reyburn, M.D., John S. Moore, M.D., John B. Johnson, M.D., A. Litton, M.D., *Committee.*

CHARLES A. POPE, M.D., *Chairman.*

OBITUARY.

Death of Nicholas Morrell, M.D.—Dr. Morrell died in this city on the 14th of August last, in the 44th year of his age. He was formerly Resident Physician to the Children's Hospital on Blackwell's Island, and a valuable contributor to this Journal. The following notice of him we copy from the *Medical Times*, and is from the pen of his fellow-student, Dr. John Watson, of this city:—

After a thorough course of preparatory reading, and seizing, in the mean time, every opportunity for acquiring a practical knowledge of his profession, by attendance at the New-York Hospital, he obtained, before the completion of his term of study, a situation as resident assistant, under Dr. Isaac Wood, at the Belleville establishment, which, at that time, embraced the prisons, the nurseries, and the alms-house, as well as the poor-house hospital. On the breaking out of the cholera in 1832, he was still occupying this situation. But Dr. Wood being taken ill, Morrell, who had already received his license, was called to officiate as his substitute; and so ably did he meet the responsibilities that were placed upon him, that the Common Council, at the close of the epidemic, honored him with a vote of thanks, and presented him with a gratuity of $500.

While at Bellevue, in connection with his devotion to the sick, he found time for much and varied professional reading; and perhaps no young man ever served in that institution, who profited more than he did by the unlimited opportunities there offered for the study of morbid anatomy.

But, brilliant as had been his medical career at the onset, an accident now befel him, which threw a cloud upon his future prospects. While prescribing for the children in the Opthalmic Wards at Bellevue, he accidentally received a drop of virulent matter into one of his eyes. An attack of purulent opthalmia was the consequence, and the total destruction of the eye. This calamity he at once felt was likely to be the bar to his success in life; and, at this juncture, accepting the situation of Resident Physician at the Children's Hospital, which institution was then established on Blackwell's Island, but soon afterwards removed to the Long Island Farms, he continued, at a moderate salary, to occupy this post until within the past eight or ten years. His long residence there deprived him for the most part of all social enjoyment, and at length extinguished his early thirst for professional notoriety; so that, on leaving the institution, and finding himself no longer in a situation to assume prominent rank in the profession, he withdrew altogether from intercourse with medical men, and devoted his attention exclusively to his private practice, which, of late years, has been somewhat arduous, occupying a circuit along the East River, between Yorkville and the northern limits of the city."

Death of P. J. Buckner, M.D.—Dr. Buckner died at his residence recently, in the city of Cincinnati. His reputation as an operator for the removal of ovarian disease is well known to the profession, and his many virtues as a Christian and a gentleman, it is said, endeared him to all who knew him.

Death of Dr. Richard Warner.—Dr. Warner died at Cromwell, Ct., on the 29th of September, aged 58 years. He was President of the Connecticut State Medical Society, an eminent physician, and much esteemed citizen,—much respected in the community in which he lived. The immediate cause of his death was rupture of the gall-bladder, produced by violent vomiting.

Death of Dr. William Cochran.—He died at Biloxi, Miss., on the 20th of August last, of yellow fever. Dr. Cochran was one of the oldest physicians in the city of Louisville, Ky. He had been a practitioner in Kentucky for many years, and was greatly esteemed for his social and professional qualities. His manners were those of an old Virginia gentleman—urbane, dignified, and courteous, and his impulses, warm, generous, and noble. At a special meeting of the physicians of Louisville, resolutions expressive of profound regret and condolence were passed.

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ERRATA.

Page 199, 15th line, for dire way read *ain way*.
" 271, 5th line, for Dr. Kay read *De Kay*.
" 315, 10th line, for fifty read *eighty*.
" 320, 9th line from bottom, for nominally read *normally*.
" 329, 1st line, for Utaw read *Eutaw*.
" 376, 9th line, for Leuckett read *Quekett*.

☞ The article on *The Surgical Diseases of Childhood*, page 427, by omission, is not credited to its proper source, the *N. Y. Medical Times*.